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The multiplicity of books is not an unmingled benefit. It has its necessary evils, and may, not unfrequently, seriously retard the progress of human knowledge by destroying the disposition to patient thinking on the part of authors, and inducing in their readers a taste for general, superficial acquirements, at the expense of laborious investigation and practical improvement. Wisdom may be supplanted by learning; the exercise of the memory may be regarded as of more value than that of thought and reflection. It cannot be imagined that the claim, set up for every book, pamphlet, or sheet, for originality in observation or doctrine, can be well founded. Much talent is often expended in the endeavour to give the air of novelty to ideas trite and uninteresting. Few books reward the reader for the time and labour of perusal: and hence Periodicals are popular, because they often present at one glance, the essence of

a work, compounded secundum artem of a very few active ingredients, so as to assume an imposing aspect. Isolated ideas and original facts are by their instrumentality immediately presented in all their native vividness and perspicuity to the public mind, instead of being buried, amidst irrelative observations, in the form of a large octavo or a ponderous quarto, by the ambitious book-maker. Unfortunately for the character of man for inventive genius, experience proves that even periodicals are too numerous; few, pretending to present original matters, deserve more than a hasty glance. This must necessarily be the case, as the day for publication arrives, before good materials can always be collected. To remedy this evil, two methods have been adopted with much advantage. One consists in presenting, in a short space, by means of critical and analytical reviews, the really important matter of all publications, periodical or otherwise,—a plan on which this Journal is now conducted; and the second method, adopted by many learned societies, in publishing, not at regular periods, but only when valuable papers have sufficiently accumulated. The Medico-Chirurgical Society of London has embraced the latter mode, and the numerous volumes of its Transactions bear testimony to its comparative superiority, notwithstanding the charm of novelty is frequently wanting.

We have already noticed many of these volumes with commendation, and shall now present an analysis of the last publication, which, as a whole, is excellent, although nothing very striking is presented to our attention.

The first paper is from J. H. James, Esq., surgeon of the Devon and Exeter Hospital, and contains the detail of a *very interesting case of an aneurism of the External Iliac Artery;* the tumour being situated just above Poupart's ligament, and eventually occupying all the fossa of the Ilium. At first, the symptoms were so peculiar and obscure, that the patient was thought to be labouring under a disease of the hip joint, the surgeon not perceiving any swelling, and the patient not complaining of any peculiar sensations at the actual seat of the disease. This was his condition when admitted into the Devon and Exeter Hospital on the 7th of May, 1829, after he had been ill four months. In a month, the tumour was well developed, and increased rapidly; there was no marked pulsa-

tion in the tumour, and none in the femoral artery. "The want of pulsation," says Mr. James, "appears to me to be no proof of want of circulation through the artery below the sac, for I am much disposed to believe that the blood, in this case, may flow through it, much in the same way as it does through veins; the impulse of the heart being lost in the one case on the small arteries, in the other, on the sides of the sac."

Brasdor's operation, revived by Mr. Wardrop, was performed on the *2d of June*, 1829: the crural artery being secured about half an inch below Poupart's ligament. *Four hours* after the operation, the patient was tranquil, and the bulk of the tumour appeared to be less. At 9, P. M. there was a diminution by measurement, of not less than three quarters of an inch. *June 3d*, the patient was doing well. *June 4th*, some inflammation of the wound from confinement of matter, which was relieved by removing the dressings. The temperature of the limb has been uniformly good, no numbness or inconvenient feeling; health good, except debility: the diminution in the measure of the tumour was fully an inch. From this day, however, the tumour began to increase. On the 12th there was some disposition to point. On the 24th the integuments were tense and shining; there was considerable pain, but the general health had not suffered. The tumour increased rapidly in all its dimensions, and as sloughing was now threatened, it became necessary to interfere, to save the patient, if possible. The operation *ultra tumorem*, having failed, (the reason of which was afterwards revealed by dissection,) it was determined in consultation to secure the aorta as affording the only possible chance of safety. This operation was performed on the 5th of July. We shall detail the steps of the operation with a view of exhibiting, practically, some of the difficulties and dangers of which all must, in some measure, be aware. The patient's shoulders were slightly raised, the bowels having previously been thoroughly emptied. The incision, through the integuments, was made over the linea alba, and extended from an inch above the umbilicus to two inches below. A small opening was scratched through the tendons, and the peritoneum opened nearly to the same extent as the external wound. This first part of the operation was somewhat impeded by very copious bleeding from the superficial vessels. As soon as the division of the

parietes was effected, the viscera protruded, and the efforts of the poor fellow continuing strong, the operator soon found himself embarrassed with almost the whole of the bowels; nearly all the colon, and a great part of the small intestines being pushed out, and presently quite distended with flatus, a circumstance frequently remarked in the operation for strangulated hernia. The aorta was found without difficulty, pulsating strongly, but surrounded with dense cellular substance, and a strong peritoneal covering. The operator, embarrassed by the coils of intestine, in which his hand was buried, found it particularly difficult to force the nail and finger under the aorta. The wound was enlarged, but to little purpose. The point of an aneurismal needle was cautiously introduced, but when it reached the other side, the handle, which unfortunately was of wood, broke. The broken part was withdrawn for fear of injuring the intestines. With some additional difficulty the finger, with Weiss' instrument upon it, was conducted under the artery, but even after this was effected, it was by no means easy, with the best assistance of his colleagues, for the surgeon to extricate the short needle bearing the ligature, so much did the intestines interfere with every kind of manipulation. When the ligature was underneath, Mr. James kept the intestines out of the way with the fingers of both hands, and placed one thumb on the vessel, whilst Mr. Luscombe drew the ligature first on the thumb and then on the artery; in this way nothing extraneous was included within the ligature. The ligature was tightly drawn and cut close: the tumour became flaccid; and at the same time the patient complained of deadness in the lower extremities. The intestines, from their inflated condition and the tension of the muscles, were with difficulty restored. The wound was closed by the quill suture, adhesive straps, and a bandage. The patient suffered much during the operation and was at times extremely faint. Brandy and laudanum were given: he complained of great pain in the lower limbs, which on the aneurismal side increased to agony and continued till he died. He had also pain in the head and intolerance of light. The temperature of the lower limbs was maintained as much as that of the trunk, but it fell in both, and about four hours after the operation the patient expired, complaining of the agonizing pain in the leg, chiefly at the knee.

Post mortem.—The tumour was considerably collapsed; a quantity of coagulated blood was found in the abdomen, which issued from the wound in the parietes, or from a small vessel in the mesentery, opened by the broken handle of the aneurismal needle. The intestines were uninjured; the aorta was firmly embraced five lines below the inferior mesenteric artery, and eleven lines above the bifurcation. The aneurismal tumour extended from the upper part of the thigh, to the side of the vertebral column, and filled the whole of the ilium. The ilium was bare and scabrous, and with the pubis, was absorbed nearly through to the acetabulum, perhaps accounting for the symptoms of diseased hip. The outer parietes of the tumour were very thin; and the peritoneum adhered most firmly to its anterior surface. The common iliac on the affected side could be traced to its division; the external iliac was immediately implicated in the tumour, ran along its anterior surface, and could be traced broad and flat, about two-thirds its length, at which point it was abruptly lost. On opening the sac, no traces of the posterior part of the artery could be found at this point, but about an inch and a half lower down, it was again recognized, forming a pouch, out of which proceeded the femoral arteries. In the aorta, there were some diseased spots, but the lower part of the external iliac was thickened and diseased in the highest degree. Below the sac, the external iliac did not terminate in the common femoral as usual, but gave off two trunks of nearly equal size, and from the inner, which corresponded with the profunda, the epigastric was given off. The ligature below the tumour had been applied to the superficial femoral about half an inch below the point which corresponded with the situation of the epigastric. The artery was obliterated at the ligature. In the aorta the appearance of clots above and below the ligature was imperfect.

Dissection thus revealed why Brasdor's operation was here unsuccessful: while the beneficial effects arising from the obliteration of one large vessel proceeding from the aneurismal sac, while another of nearly similar dimensions remained pervious, confirm, in our opinion, the correctness of the principles on which this operation is founded.

As to the propriety of the second operation, there will be a difference of opinion; but we are not among those who think

a surgeon should shrink from responsibility when it is *possible* life may be preserved by a dangerous operation. Let surgeons after deliberate examination and candid consultation determine that a disease will be soon and unavoidably fatal, and that an operation properly executed and defensible on scientific principles will afford a chance of escape, it is the surgeon's duty, in our opinion, to operate, if the patient, after a candid statement of the case, consent.

Account of the removal of a tumour situated on the cheek, by James Barlow, Esq.

Nothing very peculiar occurred in extirpating this tumour, which on examination was deemed an example of medullary sarcoma, excepting that a profuse hemorrhage resulted at every incision, causing eventually complete syncope. There was no time allowed for securing the enlarged bloodvessels singly, but the surgeon instantly and firmly grasped the tumour between the ends of his fingers, by which the bleeding was repressed; the woman revived, and the operation was carefully finished. The cavity of the mouth was not exposed, although from the edge of the masseter muscle to near the corner of the mouth, the lining membrane was exposed and was only a line in thickness. The patient recovered with little deformity; and no contortions or paralysis supervened.

Mr. Barlow relates a most important case, as a sequel of the former, in which he lost a patient instantaneously, while attempting to extirpate a tumour on the side of the neck, from the *absorption of atmospheric air through a patulous vein.*

To dangers of this character, the attention of the profession has of late years been called, particularly by Professor Dupuytren, of Paris, and Professor Mott, of New York. "On the 19th of November, 1822, a fine young woman, (Alexandrine Poirier,) came to the Hotel Dieu, for a tumour of some size, situated on the posterior and lateral part of the neck. From its hardness, renitency, and insensibility, M. Dupuytren ascertained that it was of a cellulo-fibrous nature, and proposed its removal, to which the young woman consented. The operation was performed on the 22nd of November, with all the skill and dexterity of that celebrated surgeon. No arteries were cut,

that required a ligature, and consequently there was very little hemorrhage. Neither were there any muscles or large nerves divided. Just, however, as he was proceeding to separate the last shreds of attachment, and turn the tumour out, he was surprised to hear a somewhat prolonged hissing noise, similar to that produced by the re-entrance of air into a vessel from which it had been exhausted. The operator stood for an instant astonished, and observed, that were it not for the distance of the knife from the air passage, he would have thought that he had made an opening into it. He had scarcely said the word, when the young woman cried out she was dying, and instantaneously dropped down on the floor a lifeless corpse, to which all their efforts could not restore the slightest symptom of animation. This happened in the presence of nearly 400 spectators, and the body was examined the next day, in the presence of full as many, with the most rigorous minuteness. Every part of the body was carefully dissected, but there was not a particle of morbid structure any where to be found. An examination of the heart disclosed the cause of the melancholy catastrophe. The right auricle was distended like a bladder with air, which rushed out when cut open without any mixture of blood. Fluid blood was found in the other cavities, as also in the different vessels. Great quantities of air were found in all the vessels. There was no other unnatural appearance in any part of the body."

The inference drawn from this occurrence was, that air had rushed in through one of the veins of the neck, (the divided orifice of which probably remained patulous from the diseased state of the parts,) and thus caused instant death. It would seem to prove, that the heart acts as a sucking, as well as a forcing pump, otherwise it cannot be explained how air should pass from a cut vein in the neck, to the right chambers of the heart.

Dr. Mott thus alludes to his case: "In an attempt which I made to remove the parotid gland, in an enlarged and scirrhous state, the facial vein where it passes over the base of the lower jaw, was opened in dissecting the integuments from the tumour, in the early stage of the operation, before a single artery was tied. At the instant this vessel was opened, the attention of all present was arrested by the gurgling noise of air passing into a small opening. The breathing of the patient imme-

diately became difficult and laborious, the heart beat violently and irregularly, his features were distorted, and convulsions of the whole body soon followed to so great an extent as to render it impossible to keep him on the table. He lay upon the floor in this condition for near half an hour, as all supposed, in articulo mortis. As the convulsions gradually left him, his mouth was permanently distorted, and complete hemiplegia was found to have ensued; an hour or more elapsed before he could articulate, and it was nearly a whole day before he recovered the use of his arm and leg. From a belief that these effects arose from the admission of air into the bloodvessels, which was not doubted by any person present, I instantly called to mind a set of experiments which I made some twenty years since upon dogs, by blowing air into the circulation, by inserting a blow-pipe into a large superficial vein upon the thigh, and was forcibly struck with the similarity of result."

Mr. Barlow states that his patient was a delicate married lady who was suffering from a hard tumour which occupied the whole lateral portion of the neck, and had become by its weight and bulk, insupportable. She insisted on having an operation performed. On the day appointed "I began the incisions with the scalpel a little below the ear, carrying them downwards over the tumour to the extent of not less than ten inches, and meeting in a line below the angle of the lower jaw, leaving a portion of integuments between each incision so as to form an ellipsis; when on proceeding to dissect the skin aside to get at the basis of the tumour, a sudden and unexpected hissing gurgling noise rushed obviously from a large divided empty vein, and the patient expired instantly, without either sigh, groan or struggle, and every effort to restore animation was useless. The instant the atmospheric air gained access and filled the vacuum, the hissing noise ceased, the patient expired, and the mouth of the vessel collapsed."

Mr. Barlow suggests from these and similar facts, that in operating on tumours about the neck, the surgeon should make suitable pressure on the superficial veins, or else secure them by a temporary or permanent ligature prior to division:—a suggestion of much importance. Pressure no doubt would be adequate, and should be preferred, as all are aware of the dangers resulting from the applications of ligatures on veins.

Case of ununited fracture of the Thigh-bone, successfully managed by Dr. Sommé, Principal Surgeon and Professor in the Civil Hospital, at Antwerp.

This was a case of five months duration, in which Dr. Sommé determined to employ a silver wire in place of the silk seton recommended by Dr. Physick, so that inflammation might be excited upon a larger surface than the seton could possibly affect, and the inflammatory action be kept up by changing the point of irritation.

"The left femur was broken obliquely about the middle, and the fractured extremities rode over each other, the lower inwards, and the upper end outwards. The patient being placed on his back and supported, I passed a long trocar and canula, at first downwards on the inner side of the upper fragment and made it pierce the skin behind and a little to the outside; the trocar was then withdrawn, and a silver wire passed through the canula and out at the posterior opening. The canula was then withdrawn, and being replaced on the trocar, they were introduced again above and on the outside of the lower fragment, and made to pass out at the same opening behind. The trocar having been removed, the other end of the wire was passed through the canula so that both ends were in contact behind, leaving a loop in front. I then made an incision in front, from one orifice to the other made by the trocar, and drawing the extremities of the wire through the wound, brought the loop between the fractured ends of the bone, and approximated the edges of the skin with sticking plaster."

The limb was secured in a well padded fracture box. At each dressing, the wire was drawn down, so as to depress the loop more and more into the flesh. The anterior wound cicatrized in about fifteen days; the posterior wound suppurated but slightly. Six weeks after the operation, which was performed the 12th of August 1828, the union was distinct, but the wire was not withdrawn till the 2d of October. The apparatus for preventing motion was continued until the middle of November. The external projection, in Nov. 1830, was nearly absorbed; the two ends were enveloped in a solid mass: the patient could support himself on the thigh without any pain, and merely complained of his knee, the motions of which were very limited. There was no apparent shortening of the fractured limb.

The next paper is from Dr. Benjamin G. Babington, detailing *some observations and experiments to prove the existence of a concrete oil as a constituent of the blood, particularly of the serous portion.* To it, he refers the peculiar colour of the serum of the blood. "The oil is of a deep yellow hue, is semi-solid and melts at the temperature of 90° Fahrenheit. It is lighter than water; its specific gravity being .918. From its solution in æther, it crystallizes by very slow evaporation, at a low temperature in radiated tufts. It burns with a brilliant light, has a faint and peculiar odour, resembling that of a wet bladder, forms soaps with the alkalies, and in its general characters resembles other animal oils. It is uniform in colour, general appearance, and in all its properties, from whatever kind of serum it be obtained. The only method by which I have succeeded in separating it from clear healthy serum, is by agitation with æther; though from milky serum in which it abounds, it may be obtained by means of alcohol, or by simple evaporation."

Next we observe cases of what may be termed *Phlebitis*, adduced by Mr. Lawrence and Mr. Holberton, as confirmatory of views, entertained by Dr. Robert Lee* and others, that Phlegmasia dolens depends on, or consists in, an inflammation of the veins of the lower extremity. We shall not offer any opinion on a point still the subject of discussion, but no one can doubt, that inflammation and consequent obstruction of the iliac and femoral veins may generally give rise to pain and tension from effusion of serous fluids in the cellular tissue of the limb without redness of the skin: but the question arises, do these symptoms designate the complaint termed Phlegmasia dolens? If so, this word should be abandoned, and that of Phlebitis be substituted, as expressive of the nature of the disease, and freeing it from the vague character which its present designation unavoidably perpetuates.

* Dr. Lee's valuable paper was published in the last volume of the Medico-Chirurg. Transactions.

History of a case of Stammering successfully treated by the long continued use of Cathartics, by John Bostock, M. D.

Impediments of speech, says Dr. Bostock, are usually regarded as originating either in a physical defect of the organs which are exercised in the production of articulate sounds, or as proceeding from some cause more of a mental nature, as habit, imitation, or the like. On these views are founded the different modes of treatment. Dr. B. details a case which has led him to take a different view of this subject. We subjoin the important features for the reflection of our readers, as we shall not trouble them with any hypothesis, seeing that the reporter has himself declined the task.

A healthy and robust boy, between two and three years of age, and after having acquired considerable readiness in speaking, was suddenly affected with so great a degree of stammering as to be almost incapable of uttering a single syllable. Two eminent physicians, confessing their inability to propose any specific plan of treatment, advised, as the child was plethoric, a strong purgative. The effect was so favourable, that the purgative was repeated three or four times and with decided benefit. The complaint shortly recurred and was again subdued in the same manner. After this, by way of prevention and to render less medicine necessary, the boy was confined to a vegetable diet, and even this in but moderate quantities. This was rigidly enforced for several years, with an evident effect on his appearance, although he retained a due share of activity and vigour, and would enter into all the sports and exercises suited to his age. The complaint was thus kept at bay for eight years; symptoms of it always appearing on any relaxation in diet, or whenever the purgatives were too long delayed. When about twelve years of age, a relaxation of this plan of treatment was not followed by the usual unfavourable consequences: it was hence much neglected. At length, the complaint returned and was unusually obstinate, requiring a long and severe course of purgatives, which however was finally successful. During the last two years, any symptom of relapse has been obviated by moderate dieting and purging. The boy, who is now in his fifteenth year, may be said to be free from the complaint,

and even possesses a considerable rapidity and volubility of enunciation. The purgative employed was generally calomel and jalap, followed by Epsom salts. On two or three occasions, some salivation was unintentionally excited, but it was not easy to determine whether this circumstance was productive of any advantage, as the relaxation of the bowels was cotemporary and proportional.

The Pathology of Hooping Cough, by James Alderson, M.D.

The object of the writer is to elucidate by post mortem examinations "the nature and seat of Hooping Cough." That we may do him full justice and at the same time exhibit the mode of reasoning adopted by too many of the pathologists of the day, in elucidating the nature of disease, we shall copy the result of his examinations in each case he presents.

The first dissection is that of an infant two years of age, which died with tonic and clonic convulsions from Pertussis. "There were no adhesions of the pleura, nor any fluid in the cavity of the chest; the lungs did not collapse, they contained much air which was with difficulty pressed out: in different parts of the lungs, but chiefly in the lower portions of all the lobes, a change of structure had taken place, which has been termed lobular hepatization; this was more evident in the middle lobe of the right lung, which was quite contracted to the size of the pancreas, and which it very much resembled in the sensation which it conveyed to the touch; the septa dividing the lobules were distinctly seen, and appeared perfectly healthy, the lobules themselves quite dense, and somewhat resembling the muscular structure of the heart;(!!)—several of the smaller tubes were much dilated, and lined with thick mucus. There was no appearance of inflammation in the trachea, or in the larger bronchial tubes."

No examination of the brain appears to have been made.

In the second case, a child $7\frac{1}{2}$ months old, died with symptoms of dyspnœa, flushed face, purplish lips, &c.

Dissection forty hours after death. In the head the quantity of serum in the ventricles and under the arachnoid coat was rather larger than natural. The substance of the brain, of its natural consistence; the only morbid appearance was an ir-

regular venous marbling of the medullary matter. In the chest, there was no trace of pleuritic inflammation. About one fourth of both lungs, towards their posterior and inferior part, was the subject of a morbid change; the structure was rendered very firm and dense; its limits were perfectly defined, the septa between the lobes constituting the boundaries. The portions in which this change had taken place were of a dull red colour, perfectly void of air, sinking instantly when put in water, and undergoing no change when thin slices were subjected to ablution in it. The individual lobules were firmer than they are often found in hepatized lungs; and the cellular membrane, between them, retaining its natural structure, produced a combination of looseness and density such as is usually observed in the pancreas. The remaining portions of the lungs were of a light colour, of an uniform texture, spongy and crepitant; but very little if any of the air pervading the cells could be expelled by the bronchial tubes. Most of the tubes were filled with a light yellow secretion, which, in the greater number had assumed a concrete form, having very much the character of fibrin; in others, it was in the form of a thick puriform mucus: where it occurred in a concrete form, it adhered, though slightly, to the lining membrane of the tubes. This membrane was generally pale beneath the false membrane, but in some places it was a little reddened; most of the divisions of the tubes were somewhat dilated; the concrete secretion which filled them, readily explained the difficulty of expressing air from the lungs. The heart was healthy; there was a white coagulum in the right ventricle. The abdominal viscera were generally healthy.

Louisa Cash, aged nine months, died with convulsions from hooping cough, March 4, 1829. Dissection revealed "no signs of pleuritic inflammation, no effusion. Both lungs had undergone the change so minutely described in the last case; the middle lobe of the right side, more particularly the seat of this morbid condition, much contracted, and quite impervious throughout to air. The lower portions of the other lobes on both sides were similarly affected; the remaining or upper portions of the lungs were crepitant, but did not collapse on opening the chest. The bronchial tubes, when cut open, appeared somewhat dilated."

Ann Jones, 3½ years old, died also from the effects of hooping

cough; such as imperfect respiration, convulsions, &c. *Dissection.* "No adhesions in the chest, nor any effusions; the inferior portions of all the lobes in the peculiar state before described; the middle lobe of the right lung, as observed in former cases, quite contracted and changed. There was nothing in this case like membrane, but dense muco-purulent secretion filled the more minute bronchial tubes; the heart was quite healthy, except at the apex there appeared a small flattened cyst five or six lines in diameter, which contained a limpid fluid." No examination of the contents of the cranium.

The author observes that he has dissected other cases, in which the same changes have been perceived. He wishes to fix attention on the absence of pleuritic inflammation and effusion, on the healthy state of the cellular portion of the lungs, on the firmness and density of the affected lobules, exactly defined by the septa, on the spongy and crepitant (natural) condition of the remaining portion of the lungs, from which, however, very little air could be expelled by the bronchial tubes; on the thick muco-purulent or membranous secretion in the bronchiæ impeding the access or escape of air; and finally, on the dilatation of some of the bronchial tubes. Hence he infers, "that in this rapidly fatal *stage* of the complaint, an adhesive form of inflammation is set up in the different air cells at the same time, mucus is secreted in less quantity than natural, a fibrinous exudation takes place, and adhesion of the parietes of the cells is the consequence: whilst the cellular membrane, separating the individual lobules, retains its natural structure: a form of disease which exactly resembles croup in a different part of the respiratory apparatus."

To divest the above of all paraphrase, we should say the changes alluded to, were the result of *bronchitis*, affecting the remote ramifications of the bronchiæ, without wishing in any degree to countenance the rather undigested notions of the author, as to the adhesion of mucous membranes.

We feel much indebted to the author for the facts he has detailed; they confirm views very generally entertained that severe, and especially fatal cases of pertussis are attended by what was formerly termed, inflammation of the lungs, now, more specifically, bronchitis, and that such inflammation is often the immediate cause of death. But what light does this throw on

the *nature* of hooping cough? Are we to infer that this affection is nothing more than an inflammatory affection of the bronchiæ? Such evidently is the conclusion of our author, and must be the conclusion of every one who, like him, confines his pathology to lesions of structure, and confounds diseased actions with their effects,—alteration of tissue. But if any one will consider the *peculiar* symptoms of pertussis; the sudden and paroxysmal character of the cough, the sonorous inspiration, the perfect intermission of all the symptoms, the absence of fever, the regularity of all the functions of organic and animal life during the existence of this complaint in a large proportion of cases, not to dwell on its supposed contagious character, or on its indisposition to affect individuals a second time, will find abundant reason to believe, that post mortem examinations alone have not yet elucidated, and probably never will elucidate its pathology. We would, moreover, embrace the opportunity of observing, that morbid anatomy is but *one* means, however valuable it may be, for establishing pathological and therapeutical principles: and however disgraceful it may be for any professional man at the present day to be ignorant of the effects of disease as revealed by the scalpel, still no correct pathology of any disease can be deduced from morbid anatomy alone. There are many diseases, and various important phenomena in all complaints to which our complex systems are liable, which are not in the least degree elucidated by antopsic examinations,—a fact itself fully confirmatory of the observations we have ventured to make.

A further inquiry into the comparative infrequency of Calculous diseases among sea-faring people, with some observations on their frequency in Scotland, by Alex. Copland Hutchison, F. R. S., &c. &c.

As appears from the title, this paper is supplemental to a former article on the same subject, and published in the 9th vol. of the Medico-Chirurgical Transactions. By statistical details, the author endeavours to substantiate the fact, which is singular and important, that calculus of the bladder is a very rare disease among sea-faring people. He also in a similar manner attempts to prove, contrary to received impressions, that the same complaint occurs more frequently in Scotland

than in England. As no solution of these points is attempted, and no practical inferences made, we shall pass them by without further notice.

Practical observations on the healthy and morbid conditions of Stumps, by George Langstaff, Esq.

Mr. Langstaff has been for twenty years surgeon to the Cripple-gate workhouse, where he has enjoyed extensive opportunities in operative surgery, and the permission of inspecting the bodies of those who have died there. Of these privileges, he appears to have availed himself, and in the present paper has given a long series of dissections of stumps to illustrate the changes which result from amputation of the upper or lower extremities, and hence to determine the best method of forming a "good stump,"—capable of receiving any mechanical assistance. After describing what he believes to be the healthy process by which the extremity of the bone becomes rounded, the soft parts adherent and the cicatrix formed, he observes,

"Should the surfaces of the amputated part not regularly unite by the first intention, or by the second, and there be inflammation affecting the divided nerves, then a mortification is established, which occasions the face of the stump to ulcerate, or mortify; frequently causing a portion of the extremity of the bone to project, which occasionally becomes carious and should be taken off. Sometimes osseous deposition takes place, round the edges of the sawn bones, and exostosis is produced; sometimes a spiculum of bone projects horizontally, generally taking the direction of the artery, vein and nerves of the limb, which thus become implicated in the bony deposit; and sometimes, I have found a large spiculum of bone with a very sharp point taking an oblique direction, and connected with a muscle, occasioning morbid changes in its fibres, and being a source of great suffering to the patient. In all such stumps, I have invariably found the nerves greatly enlarged at their extremities, giving them a ganglionic appearance, and generally firmly adherent to the surface of the stump, and frequently in union with spicula of bone, in the manner I have just described. On cutting through these bulbous extremities of the nerves, there are no signs of enlargement of their natural structure, the thickening appearing to have been occasioned wholly by the deposition of lymph, the effect of inflammation in the cellular tissue of the neurilema."

On reviewing the above extract, the opinions of our author will not be very evident, but taking it in conjunction with the practice afterwards recommended, he appears to believe, that, besides irritation from too free osseous deposit, and from irregular spicula of bone injuring nerves, muscles, &c., an inflammation of the divided nerves, giving rise among other consequences to a ganglionic enlargement of their extremities, so universally noticed in wounds of these parts, is the source of a morbid action which occasions the stump to ulcerate or to mortify, and the bone to become carious. For this opinion we can discover no foundation in physiology, pathology, or therapeutics. Inordinate inflammation of the trunks of the nerves is no rare occurrence, and when acute or even chronic, is sufficiently terrible from the intense pain, and the tonic and clonic convulsions more or less extensively excited, without being thus rendered the source of phagedenic and gangrenous inflammation. On the contrary, they possess great powers of organic life, and resist the destructive consequences of inflammation to a great degree in their own tissue at least, and there is no reason to suppose that they, in their excited state, cause any injurious change in surrounding tissues. Mr. Langstaff details a very interesting case in which amputation below the elbow was performed, in consequence of the arm being altogether useless and the seat of severe pain, which impaired the general health of a female who two years previously had severely injured this limb by a fall. The stump did not heal favourably—the patient suffered great agony, and became extremely nervous. "When I saw her, the surface of the stump presented an unfavourable appearance, the skin covering the ends of the radius and ulna was very thin, excessively vascular, and the ends of these bones seemed likely to cause its absorption. There was also a constant state of convulsive action of the muscles of the stump, accompanied with agonizing pain. She was hysterical, and the paroxysms were frequent; the spasmodic affection of the muscles of the arm became more evident, and a pulsation almost aneurismal could be seen and felt at the extremity of the stump in the situation of the radial and ulnar arteries."

Several months were passed in vain attempts to improve her general health and to relieve the pain; Mr. Langstaff, "having

seen, in several cases, symptoms similar to these, caused by the extremities of the nerves becoming ganglionic," recommended amputation above the elbow, which was agreed to. "I performed it by the flap operation, and previously to securing the arteries, *I drew out each nerve to the extent of half an inch from the surface of the stump, with a tenaculum, and cut through them to prevent their interrupting the progress of cicatrization of the integumental parts*, which I have done in other instances with success, and I was astonished that the division did not occasion greater pain than was complained of by the patient."

The patient was relieved of her pain, spasms, and convulsions, and with improved health and a good stump, was able to gain her livelihood.

To us, it appears that this case was originally a neuritis, not relieved by the first amputation because the operation did not extend above the diseased portion of the nerves, but relieved by the second, when the section was made through healthy nerves. We must condemn the practice as well as theory of Mr. L. It seems to us barbarous, we cannot use a milder expression, after the severe operation of amputation above the elbow, to pull out each nervous trunk separately with a tenaculum and then divide it, for fear ganglions might form, or the progress of cicatrization be prevented ! !—Fears which are altogether useless, for ganglions are the common result of wounded nerves, or unfounded, as cicatrization is not prevented by inflamed nerves. Mr. L. recommends very decidedly the flap operation, as superior to the circular; having witnessed mischievous results from the latter mode, and having always succeeded in making a sound and useful stump where he has employed the former.

Aneurism of the external Iliac Artery, in which a ligature was applied to the common iliac artery, by Philip Crampton, M. D., &c. &c.

In the fourth volume of this Journal, p. 178, we have presented our readers with an account of the first case of aneurism for which the common iliac artery was secured. This was successfully accomplished by our distinguished surgeon Dr. Mott, of New York, and we are happy to find that due credit is given to him by Mr. Crampton. Mr. C. has operated in a second

case at first with apparent success, but the patient subsequently perished from hemorrhage; the cause of which, we regret to add, resulted from the use of an animal ligature, as evinced on dissection.

The patient, P. McGowan, aged 30 years, hitherto healthy, was admitted into the General Hospital, Dublin, on the 8th of July 1828, with two aneurismal tumours, one about the size of a pullet's egg in the right ham; the other in the right iliac region, extending from about three inches below the crural arch on the right side, to within about three inches of the umbilicus. The tumour was divided by a furrow in the line of Poupart's ligament, into two portions. After suitable preparation, the operation for securing the common iliac artery was performed by Mr. C. on the 18th of July 1828. The first incision commenced at the anterior extremity of the last false rib, proceeding directly downwards to the os ilium, it followed the line of the crista ilii, keeping a very little within its inner margin, until it terminated at the superior anterior spinous process of that bone; the incision was therefore curvilinear, the concavity looking towards the navel. The abdominal muscles were then divided to the extent of about an inch, close to the superior anterior spinous process, down to the peritoneum. Through this opening and between the fascia iliaca and the peritoneum, a probe pointed bistoury was passed on the finger as a director, and the abdominal muscles separated from their attachment to the crista ilii, so as to admit the hand. Detaching the very slight connections existing between the peritoneum and the iliac fascia, Mr. C. was able to raise up the peritoneal sac with its contained intestines on the palm of his hand, and thus obtained a distinct view of all the important parts beneath, as the parts were unobscured by a single drop of blood: there lay the great iliac artery, nearly as large as the finger, beating at the rate of 120 in a minute, its yellowish white coat contrasting strongly with the dark blue of the iliac vein which seemed double its size: the ureter in its course to the bladder, lay like a white tape across the artery, but in the process of separating the peritoneum, it was raised with that membrane to which it remained attached. The fulness of the iliac vein varied, sometimes rising above, sometimes sinking below the level of that artery. The forefinger of the left hand was passed under the artery,

which with a little management was easily separated from the vein; and on the finger, a common eyed probe furnished with a ligature of moistened catgut was passed under the vessel and secured by the surgeon's knot. All pulsation ceased in the tumour; the artery was full and throbbing above the ligature, but empty and motionless below. The external wound was now closed, the operation having lasted twenty-two minutes.

The tumour soon diminished one third: the pulse became full and bounding, so that v. s. to ℥ xx. was practised at 7 P. M. At ten o'clock the same evening, the patient was free from pain, tranquil, and his pulse at 88. The limb, with the exception of the toes, was warm; the vena saphena full.

On the 19th doing well, pulse 88, toes warm but not so warm as those of the left foot. On the 20th uneasy from pain and rumbling in the bowels, relieved by a cathartic of oil of turpentine and castor oil. An obscure pulsation is now, fifty hours after the operation, discovered in the tumour. 21st. Pulsation more evident but none in the femoral artery, nor in the aneurism in the ham, which is diminished to half its bulk. 22d. Pulsation continues, and some thrill noticed. No particular change until the 26th when the ligature came away, and the patient on turning in bed, suddenly felt a severe pain in his thigh and knee;—the forepart of the thigh was numb. It lasted for ten minutes. On the 27th much the same: On the 28th complained less, asked for nourishment, wound nearly healed; the tumour diminished by one third, but the pulsation as strong as before the operation. At 6 P. M. while sitting up to take some gruel, the blood suddenly gushed from the wound, the patient fell backwards, and expired in less than a minute.

On *dissecting* the body next day, the common iliac artery at about three fourths of an inch from the bifurcation of the aorta was lost in an oblong tumour, which terminated upon, but did not communicate with the sac. On opening the tumour, about half an ounce of greenish pus was discharged, and the artery was discovered somewhat contracted and marked where the ligature had been applied. On injecting the artery from above with air or water, the fact was established that the catgut ligature had been softened and thrown off, before the obstruction in the artery or the coagulation of blood in the aneurismal sac had been completed. A small abscess had formed in the place

occupied by the ligature. On slitting up the artery, the internal and middle coats were found to be completely divided, and small portions of lymph adhered to its internal surface. The popliteal aneurism was far advanced towards a cure; the contents of the sac were quite solid; the tumour reduced to about the size of a walnut: the artery, for six inches above the sac, was filled with a firm coagulum.

Mr. Crampton infers that securing the common iliac artery is not only a feasible, but a very easy operation when executed by making the external incision high up as in the present case. He believes the difficulties encountered by Dr. Mott, arose from his incision being *too low*. He also believes that the aorta could be secured with the same facility, provided it should ever be deemed advisable to perform this operation, the propriety of which several facts would seem to warrant under peculiar circumstances.

On the Glanders in the human subject, by John Elliotson, M. D.

Dr. Elliotson met with two cases of very singular and fatal disease, presenting a combination of phenomena with which he was unacquainted, and which induced in his mind a suspicion that some morbid poison had been applied. After much investigation and comparison with other cases observed in London, with some published by Mr. Travers in his work on constitutional irritation, and others published in Hufeland's Journal, he has concluded that they were the result of inoculation from animals affected with glanders, and that they presented all the peculiar phenomena of this disease as it exists in the lower animals: thus increasing the hitherto small list of diseases which can be propagated from the lower orders of animated beings to the human race. The paper is long and interesting; we shall content ourselves with an extract, detailing the symptoms in one of the patients, that the disease may be recognized if met with by any of our readers, and its cause if possible be detected.

"Thomas Marshall, æt. 17, was admitted into St. Thomas' Hospital under the care of Dr. Roots, March 19, 1829. The upper half of the face, including the eyelids and the nose, with the portion of the cheek on each side, especially on the right,

was greatly tumefied, so that the eyes were closed. The eyelids and swollen portions of the cheeks were red and hot, dry and shining; but the nose was dark coloured, and on its right half, black, cold, and senseless. From around the grangrened portion of the nose, and some other points, a little pus was oozing, as well as a thin dark coloured fluid; and, *from the nostrils a thick discharge of a deep yellow colour, here and there a little bloody, was taking place*, exceedingly copious from the *right* nostril. Several *hard* phlyzacious pustules existed on, and immediately around the nose, still principally on the right side, and in various parts of the trunk and extremities. Tumefactions were observed in both forearms and on the back of the right hand. Some of these were hard, others softening into suppuration. The temperature was high; the pulse 136 and sharp; the tongue white and rather dry. The respiratory murmur was indistinct at the right lower part of the chest, and the respiration quick and difficult. The gums were slightly turgid. It was stated, that twelve days previously, (Saturday March 7th,) he had been attacked by pain in the right hypochondrium, extending up the chest, dyspnœa, and rigors: that he took ten grains of pilula hydrargyri, and the next day felt quite well. The pain and dyspnœa, however, returned on the day following, but subsided at the end of the week, under the use of leeches and purging. On the Sunday, five days before his admission, a pimple was said to have appeared on the right side of his nose; while this increased and suppurated, the surrounding parts swelled and grew red, and the state of things became much as I have described. Fourteen ounces of blood were taken from the arm, and became both buffed and cupped. Some of the tumefactions were cut into, and large quantities of pus discharged. Lint, soaked in a solution of the chloride of soda, and covered with a poultice of stale beer grounds, was applied over the nose fresh every hour, and a common poultice to the abscesses which had been opened. An ounce of castor oil was given, and the diet restricted to slops, milk, and arrow-root. Late in the evening two greenish and very offensive stools were passed involuntarily, and a little delirium was observed. Tumefactions had begun upon both legs, one upon the left hand, and one upon the right elbow. The next morning, more tumefactions were seen on the extremities, red as all the others had been: but the others had now acquired a purple tint, and the wounds looked dark. The forehead was swollen and red, and more pustules had formed upon the face. There was constant agitation, frequent delirium, profuse diarrhœa, and there had been no sleep. Mistura cretæ composita was prescribed, sixteen leeches applied to the temples, and strong beef tea added to the diet. In the evening, the diarrhœa was checked, but

the upper lip had grown very dark; sordes encrusted the teeth, the surface, still hot, was covered by a profuse sweat, and many new, hard pustules were seen upon the trunk and extremities. The pulse had become soft and was small and rapid. Twenty-five minims of tinctura opii were given in the first dose of the mistura cretæ composita, and one grain of the sulphas quininæ every four hours prescribed. The oleum terebinthinæ was substituted for the solution of the chloride of soda. He was calm after taking the opium, but about four o'clock in the morning was observed to breathe with more difficulty, to be unable to swallow, and to be constantly delirious; and from that time he sank gradually and expired at six.

"I was not present at the inspection, but understand that there were proofs of a violent pleuro-peripneumonia in the lower part of the right side, and that two ounces of healthy pus were found between the adherent lung and the diaphragm. A dark red patch existed in the stomach, and several at irregular distances throughout the intestines. The mucous membrane of the stomach was very lacerable at that spot. The other viscera, and all the contents of the head, as well as the veins of the extremities, were reported healthy: but the mucous membrane of the nostrils was not examined. The abscess which had been opened on the back of the right hand, communicated with the joint of the metacarpal bone of the middle finger, but those on the arm did not communicate with the elbow."

An account of the parts concerned in the Aneurism, for the cure of which Dr. Stevens tied the Internal Iliac Artery, at Santa Cruz, in the year 1812, *by Mr. Richard Owen.*

In the 5th volume of these Transactions, Dr. Stevens published his account of this case, and of the successful issue of the operation for securing the internal iliac artery, then for the first time performed. His patient recovered, and ten years after died of some pectoral disease. Dr. Stevens had the privilege of examining the body, and ascertained that the internal iliac had been secured and was now obliterated. The preparation he conveyed last year to England and submitted it to Mr. Owen for minute examination: the result of which is now published.

"The operation was performed on the 27th of December, 1812. An incision about five inches in length was made on the left side, in the lower and lateral part of the abdomen, parallel with the epigastric artery, and nearly half an inch on the outer side of

it; the peritoneum was separated from its loose connection with the iliacus internus and psoas magnus; it was then turned inwards to the division of the common iliac artery. The internal iliac being found, and compressed between the thumb and finger, the tumour ceased to pulsate and began to disappear; a ligature was passed round the vessel by means of a probe, and it was tied about half an inch from its origin. The tumour disappeared almost immediately after the operation, and the wound healed kindly. About the end of the third week, the ligature came away, and in six weeks the woman was perfectly well. The operation was neither very difficult, nor very tedious; the woman did not complain of much pain, nor did she lose an ounce of blood. There was no difficulty in avoiding the ureter; when the peritoneum was turned inwards the ureter followed it."

On examination, the internal and external iliac arteries were given off in the usual manner. The internal iliac was found completely obliterated where the ligature had been applied, but the obliteration had not extended to the origin of the external iliac; as the ilio-lumbar artery appears to have arisen just above the situation of the ligature. In the state of a ligamentous chord, the internal iliac descended for the space of an inch, and then suddenly resuming its natural diameter, it again became pervious, and so continued for the extent of half an inch; the glutæal artery arose from the lower part of this space; a sacro-lateral vessel from about the middle; and the obturator artery from the upper part of it. The latter vessel was, however, entirely obliterated, but the sacro-lateral artery was pervious, of the size of a crow-quill, and passed inwards to the second sacral foramen; whilst the glutæal artery, of its natural size, received close to its origin two vessels as large as the preceding, given off from the sacro-lateral artery, near the third and fourth sacral foramina of the left side. The anastomoses of the sacro-lateral arteries with each other and the sacro-median, were large and tortuous. Immediately after the origin of the glutæal, the ischiatic, obliterated and chord-like, passed on to the lower part of the ischiatic notch; the sanatory processes set on foot by the application of the ligature being uninterrupted by the enfeebled current of blood, passing from small canals to a large one. The glutæal artery was in a healthy condition, and of a natural size; but an elongated tumour three inches and a half in length, and about two-thirds of an inch in breadth,

between the tuberosity of the ischium and the great trochanter, indicated the true seat of the disease in the sciatic artery, and not in the glutæal, as was believed. The tumour consisted of condensed cellular membrane and the peculiar fibrous arterial coat, and contained a dark coloured, granular, not lamellated coagulum, which, when removed, showed the internal surface of the sac to be irregular. From the ischiatic notch to the tumour, the artery was completely impervious, its texture altered, and the remains of its cavity filled with indurated and partly calcareous matter. From the lower part of the tumour, the sciatic artery was continued down the posterior part of the thigh of an uncommon size, nearly as large as the femoral artery in front; its caliber did not correspond with the apparent magnitude, as its coats were much thickened. It was obliterated for about the space of an inch below the sac, and became pervious after receiving an anastomosing vessel from the arteria profunda.

"Sufficient has been observed to place beyond doubt the existence and cure of an aneurism, situated as originally described, and the obliteration of the internal iliac artery, in consequence of the application of the ligature at the part stated in Dr. Stevens's Memoir."

This operation on the internal iliac is said to have been performed five times. The second operation was effected by Mr. Atkinson, of York, and recorded in the 28th vol. of the London Medical and Physical Journal, and in Cooper's Surgical Dictionary. The operation was performed on the 12th of May, 1817, and for many days the patient was entirely relieved; but about the tenth day, coagula, and finally blood, were discharged by the wound, under which the patient sunk exhausted. On dissection, the internal iliac was found ulcerated through where the ligature had been applied; all the coats were diseased, and in the lower part where the artery was wider, and the coats evidently more diseased, the orifice was occupied by a coagulum of grumous blood, which being removed, exposed more fully this open mouth, which again, after a short interval, was filled with more fluid ichor from the sac below. It was manifest, that this had been the source of the hemorrhage, from the sac up the artery into the pelvis, owing to the want of obliteration in the lower portion of the artery.

The third case is noticed in Averill's Operative Surgery, and in Cooper's Surgical Dictionary. The report is not accompanied by details, but the artery is said to have been successfully secured by an army surgeon in Russia.

The operation has been performed by Mr. Thomas, of the island of Barbadoes. The preparation has been deposited by Sir Astley Cooper in the museum of Guy's Hospital.

The fifth case is reported by Dr. J. Pomeroy White, of Hudson, state of New-York, in the American Journal of the Medical Sciences, vol. 1st, and noticed in the 5th volume of this Journal. The patient, it will be recollected, was sixty years of age, and of intemperate habits. He recovered.

Art. II.—JURIDICAL EXHUMATIONS.

Traité des Exhumations Juridiques, et Considerations sur les Changements physiques que les Cadavres éprouvent en se pourrissant dans la terre, dans l'eau, dans les fosses d'aisance, et dans le fumier: Par M. Orfila, *Professeur à la Faculté de Paris, Membre de plusieurs Sociétés savantes, nationales et étrangeres, et par* M. O. Lesueur, *Docteur en Médecine, agrégé près la Faculté de Médecine de Paris, &c. Ouvrage orné de cinq planches, dont quatre coloriées. Tome* I^er^. *pp.* 388. *Tome* II^d^. *pp.* 384. *8vo. Paris,* 1831.

Of the numerous contributions to Medical Jurisprudence for which we are indebted to the labours of M. Orfila, the present will not, we are persuaded, be considered as the least interesting or important. A knowledge of the spontaneous changes which the human body undergoes subsequently to interment, and the succession and periods in which they occur, is all important to the medical jurist, to enable him when called into a court of justice, to decide correctly many of the questions which may, in certain cases, especially in accusations for mur-

der, be submitted for his consideration. The investigation and accumulation of the facts from which this knowledge is to be derived, could not have been undertaken by an individual who possesses, in a greater degree, all the requisite qualifications, than M. Orfila, or one, upon the correctness of whose statements, confidence can be more implicitly relied. As the work before us, therefore, interests every member of the profession in this country, while in all probability, it will fall in the hands of but few, we hasten, at this early period, to lay before our readers an analysis of its contents, or at least of the general conclusions to which the author has been led from his numerous observations. The first volume of a treatise on the same subject, by Dr. Güntz, was published in Leipzig, in 1827,* and we had at first intended to compare the statements of the latter with those of M. Orfila, but finding that this would occupy more space than it is proper to appropriate to a single review, we have concluded to confine ourselves on the present occasion solely to those of the French professor.

The work of M. Orfila is divided into four sections. The first of which relates to the legislation in reference to juridical exhumations, the dangers with which they may be attended, and the precautions to be taken in order to avoid those dangers. We cannot stop to notice either of these points, but must proceed to the second section, in which those physical changes are considered which the varous organs of the body undergo in the grave, and the state in which these will be ordinarily found at the several periods subsequent to interment at which they may be examined.

The first chapter of this section treats of the physical changes experienced by the tissues of a dead body when it is buried in a separate grave. The author details minutely the appearances presented by thirty two bodies examined at various periods after interment, from which are deduced the following general results.

The epidermis is very rapidly destroyed. Soon after interment it becomes reduced in thickness, and softened, and generally adheres intimately with the clothing of the corpse or with

* Der Leichnam des Menschen in Seinen Physichen verwandelungen, Nach Beobachtungen und Versuchen Dargestellt.

the earth which immediately surrounds the body when it has been buried naked. At those parts from which it has not been removed with the earth in opening the grave, it is wrinkled, raised from the surface, and may be readily detached in thin semi-transparent shreds, and is of a grayish white colour—even on the abdomen, where the cutis is green. The epidermis of the palms of the hands and soles of the feet, where it presents the greatest thickness, is drier, more dense, of a white colour inclining to yellow, and very much wrinkled, resembling that on which a poultice during life has for a long time been applied. Occasionally its inner surface is partly coloured red or green, by a serous fluid, which may be washed off, when the epidermis becomes white. No order is observed, in which the different parts of the body become despoiled of their cuticle. At a somewhat later period, those portions of the epidermis not yet separated from the body, undergo a very remarkable alteration. They frequently become converted into a greasy substance, and adhere more intimately to the earth or clothing by which the corpse is immediately surrounded; forming a layer of a reddish or brown colour, composed of numerous minute rounded elevations in close contact. Sometimes in place of this layer we have a viscid and fatty mucus, and at others a dry crust like that of cheese. In either case, the parts on which the epidermis adheres is frequently covered with a white flocculent mould, resembling in some cases, white jelly. At a still later period, the epidermis has entirely disappeared. If, however, it has been detached during life at any part, by an effusion of serum beneath it, it may then resist putrefaction, and will present after many months nearly all its ordinary characteristics.

The nails soften, acquire a grayish colour, and are deprived of their elasticity. They lose by degrees their semi-transparency, and may be easily detached, even when the body has been interred only twenty-four or thirty hours. The skin beneath them then presents a smooth, moist, and bright red appearance, resembling currant jelly. At a later period, the nails become dry and detached from the fingers.

The hair resists strongly decomposition. M. Orfila has always found it entirely unchanged, even on bodies that had been buried for many years.

The cutis during the first days after interment is of a yellowish colour, inclining somewhat to a rose; here and there, however, it presents a greenish, reddish, and violet tint. It is, as yet, but little softened, and in no degree corroded, and scarcely changed from its natural state. In general it is more humid on the posterior part of the trunk than in any other part. At a later period, it is frequently covered at certain parts, with small sand-like granulations, formed of the phosphate of lime; it is now almost entirely separated by putrefaction from the back, forming a kind of sac, like the skin on the back of the toad. Its thickness is not yet sensibly diminished, except perhaps on the eyelids, where it is readily torn; its structure is easily recognized, and in no part is it changed into fat. At a still later period, it commences to dry, becomes thinner, and assumes a colour which varies from a fawn to a deep yellow, almost orange, or to a brown, sometimes very deep. It is covered by the coating, and here and there by the mould, which were described when speaking of the epidermis. This mouldiness is never found on the parts where the greatest humidity exists, as on the back, but is in considerable quantity on those which are ordinarily dry. The dessication of the skin goes on daily; the latter becomes as it were tanned, so that when we strike with the handle of the scalpel upon any part of the body, a sound is heard somewhat similar to that produced by striking upon a pasteboard box. If an incision be now made into the cutis, the edges present the appearance of grayish leather, and we already detect an evident tendency to saponification; this tendency is remarked especially at those places in which the subcutaneous cellular tissue is changed into fat; it is also at those parts that, in general, the skin is the least changed.

The rapid destruction of the skin around the anus, is occasioned by the facility with which this part is attacked by the larvæ of insects. The adhesion of the cutis to the subjacent parts varies; where it is attached to the bones, it adheres by a dry cellular tissue, easily torn and detached; on the contrary, it is very adherent over those parts furnished with an adipose cellular tissue, or where it covers muscles without the intervention of adipose matter. At a still later period the skin becomes drier and thinner wherever it has not become saponified—on the anterior parts of the corpse it is still the driest; frequently

it is perfectly dry on the front of the body, while on the back it is still very moist, thin, and partly destroyed by maggots. It becomes gradually of a deeper brown, or of a dirty yellow, but in general it retains yet considerable firmness, although destroyed, or as it were, corroded at many points. The thinning of the cutis proceeds at length so far, that no longer any traces of it are perceptible. It is proper to remark, that the destruction of this tissue takes place much more rapidly in those portions which have not become dry nor transformed into fat.

Among the changes which the skin undergoes after inhumation, M. Orfila has not, it will be perceived, comprised cadaveric lividities, welts, or ecchymoses. The cadaveric lividities of the skin, he remarks, commence ordinarily from the period the body commences to lose its heat, and consequently before interment; besides, he has described them minutely in his *Leçons de Médecine Légale*, Tom. II. p. 237. With respect to the welts, they are nothing more than the cadaveric lividities of the skin, traversed by lines, furrows, or whitish spots, produced evidently by the pressure upon the parts of the clothing, ligatures, &c. As to the subcutaneous ecchymoses, he has never had occasion to observe them in the subjects that he has submitted to putrefaction—he does not, however, suppose that they are never developed during the putrefaction of dead bodies, but on the contrary, believes that they will form in young individuals whose bodies are fat and full of juices, who have died of an acute disease, and have been interred during summer. These ecchymoses show themselves most frequently in the most depending parts, as the occiput and loins, or in the eyelids and scrotum, where the cellular tissue is very loose and readily distended. In general their colour is uniform, never presenting the different shades of yellow, reddish brown, and black, which are ordinarily observed in the ecchymoses which have been produced during life.

The subcutaneous cellular tissue presents but little change at first. On the anterior part of the body it becomes dry and tolerably firm, especially over the abdomen and at the centre of the thorax, where the layer of muscular fibres is very thin. On the posterior part of the body, it becomes infiltrated, soft, and tender. The infiltration may be simply of a bloody fluid, or of a red fluid, containing minute globules of a yellow fatty matter.

At the back part of the head and neck, and over nearly the whole of the posterior part of the thorax, and the loins, the infiltration is more or less of a violet hue, and of a gelatinous appearance, very similar to the tumefaction of the cellular tissue of the scalp, which is occasionally observed in new born infants, the tissue being swollen and readily torn. On the buttocks and posterior surface of the limbs, this gelatinous condition is not so striking, and the fluid contained in the cellullar tissue, escapes much more readily than in the other parts. On the sides of the thorax and abdomen, the infiltration of the cellular tissue presents an appearance intermediate between that of the posterior and anterior portions of the trunk. On the anterior and lateral parts of the thighs and arms where the muscles have considerable thickness, the cellular tissue is very moist but not infiltrated, and is readily torn,—putrefaction having already taken place here to a greater extent than in those parts where the muscular tissue is thinner. In the bodies of those who have laboured under anasarca, the infiltration of the cellular tissue, at the parts alluded to, is more considerable than in other cases.

At a later period, especially in fat subjects, the adipose cellular tissue commences to saponify. It becomes of a grayish white or yellow, of the consistency of suet, and of an unctuous feel. When in considerable amount it presents, on being cut into, a porous spongy appearance, which arises from the presence of a multitude of small cavities, produced either by the drying of the tissue or by the disengagement of gas. At a still later period M. Orfila has found the cellular tissue, as it were, dried, opaque, white or grayish, filamentous, and easily torn, in those parts where it has ordinarily but little fat; and yellow, tender, moist and very similar to lard that has been rendered and allowed again to cool, in those parts in which it contained fat. Finally it was found of an orange yellow, of a granular appearance, and evidently saponified, in parts loaded with fat. The conversion of the fatty cellular tissue into soap is far from being a constant phenomenon. M. Orfila has seen the tissue present in all respects its natural condition in an emaciated body that had been buried for months, while in a fat body interred about the same time with the former and in the same soil, it had already become, in different parts, saponified. At a

still more advanced period subsequent to interment, the cellular tissue which has not been converted into soap becomes dry, brown, and finally completely destroyed.

The muscular tissue. In this the first change is a softening. In general it loses at first some degree of its redness wherever it is not infiltrated to any extent; in some parts however, it presents a violet tint, while on the abdomen it is frequently green. For some time the texture of the muscles is still very perceptible; they are not converted into a fatty matter excepting perhaps in the orbits of the eyes, where saponification occurs much sooner than elsewhere. The colour of the muscles is now greenish or like the dregs of wine; the first is more common than the second, which is never remarked excepting in those situations where a bloody infiltration occurs. With the exception of that part within the orbits, the tissue under consideration is moist throughout, and in many parts it is soaked with a sero-sanguineous fluid similar in colour to that contained in the cellular tissue. This fluid is so abundant in some of the muscular parts, particularly about the back, that it runs out in great quantity upon pressure being applied, or an incision being made. The muscles themselves resemble a jelley, in the midst of which may be detected fleshy fibres; the form of the organs in which the infiltration has taken place, is still, however, easily recognized. Notwithstanding the fluids with which the muscles are soaked, they are reduced in bulk, their fibres being, as it were, dissolved in the fluid they contain. On the inner part of the limbs, the muscular tissue forms a very thin covering to the bones. The resistance of this tissue is in general very much diminished; the ease with which it can be torn being in proportion to its degree of infiltration; as this is the greatest on the back where the muscles are the thickest, they there present the least firmness. After it has become softened and has assumed more or less of a green colour or that of the dregs of wine, or, on the contrary after having become paler, the muscular tissue saponifies or becomes destroyed. The change into soap occurs more especially in fat bodies; the muscular fibres become more and more pale, many are already changed into a whitish soap, while others still preserve their rosy hue. M. Orfila has never observed a whole muscle completely changed into this substance. The entire destruction of the muscles is much more common

than their saponification. It takes place as follows; the tissue of the muscle becoming softened, dries gradually, and loses so much of its volume as to become flat; as the dryness increases, the muscle becomes of a darker colour and finally perfectly brown. The tendons, and aponeuroses, with their fibrous structure, are still perceptible. All the muscles, however, do not become dry; those which still retain their moisture present always a deep green colour, or that of the dregs of wine. The dried muscular fibres become finally completely destroyed, and all that remains behind are membranous layers, of a gray or yellowish brown colour, presenting no trace of fibres. Frequently these layers are moist, brown, and very similar to leaves of tobacco that have been first dried and then moistened. Finally, in some parts of the body, in place of the muscles there remain spongy masses of a brown, or even black colour, resembling in appearance certain of the polypi. On the posterior part of the limbs, the drying of the muscles is never so complete as in other parts; neither has M. Orfila found the dryness to take place on the back nor in the loins, where the muscles are constantly bathed in fluids. They are here destroyed as it were by maceration.

Aponeuroses and tendons. The aponeuroses which envelope the muscles, preserve for a long time their brilliancy and firmness; they in general, however, assume a bluish colour at those parts where they are very thin. The same may be said of the tendons, with the exception, that they always retain a more white, and silvery appearance, arising evidently from their greater thickness. Wherever the tendons are spread out in sheets, they appear in all respects similar to the aponeuroses. Some time after interment, the tissues under consideration assume at first an opaline or yellowish appearance; subsequently their colour changes to a clear and even deep brown. They become more or less completely dry and lose their pearly appearance; but on leaving them in contact with water for some time, they assume their original characters. It is the tendons and aponeuroses in connection with the cellular tissue which constitute, almost entirely, the membranous masses that remain after the disappearance of all the soft parts; these in their turn become finally destroyed, and the body

is reduced entirely to a skeleton. The tendinous tissue is that which resists the longest putrefaction.

Ligamentous tissue. During the first months after interment, the articulations are still entire, their ligaments having scarcely changed in appearance, and retain still considerable firmness. Afterwards the ligaments soften, become yellow, and after a considerable lapse of time they are entirely destroyed. They do not resist putrefaction so long as the tendons. The crucial ligaments of the knee joint remain unchanged the longest. All the others, after a few months, become so completely confounded with the soft parts by which they are surrounded, as to render it impossible to recognize them.

Cartilaginous tissue. The cartilages of the articulations present for a long time their natural appearance and texture, excepting that they assume a slight rose colour. Subsequently they become yellow and lose some part of their thickness; their consistency gradually diminishes, and they finally disappear, leaving the surface of the bone covered with a very thin, moist, and somewhat fatty layer of the colour of bister. The cartilages of the ribs become likewise brown and lose their suppleness; but before they disappear entirely they become perfectly black, fragile, and as it were worm-eaten.

Osseous tissue. The bones scarcely undergo any alteration even after the lapse of many centuries. The teeth also resist destruction for a long period. The enamel of the latter, appears, indeed, to be almost indestructible.

Serous tissue. The pleura, peritoneum, &c., assume at first a grayish colour, and are softened. Later, they become thinner, tear readily, and are somewhat dry. At a still later period, their colour is pale, then changes to a bluish tint, afterwards to an olive brown, or bluish black. Frequently their surface is coated with a black substance, resembling fat. Finally, these membranes entirely disappear. M. Orfila has recognized the pleura in a body interred in a thick coffin, and opened after having remained in the earth fourteen months.

Encephalon. The brain, which so rapidly putrifies when out of the cranium, resists for some time decomposition when allowed to remain within the skull. Frequently, the vessels of this organ are engorged with blood at the moment of death, which arises from the distension of the stomach by gas, the

diaphragm in consequence is pressed upwards and the blood contained in the right side of the heart is forced towards the brain. During many weeks after interment, at least when the temperature of the season is not considerable, the brain preserves so much of its natural appearance as to enable us to trace its different parts and to detect the existence of any morbid effusions or softening. Its colour very soon, however, changes to a bright olive gray. It commences to soften, which change begins in its cineritious substance; it now diminishes in volume and no longer fills the cavity of the cranium. The whole or nearly all the convolutions may be seen, as well as the two substances of which the brain is composed, the medullary portion is, however, of a grayish colour, and the cineritious of an olive green. In a case in which death was caused rapidly by an attack of apoplexy, M. Orfila found the brain reduced at a very early period into a very soft pap of the colour of the dregs of wine. Subsequently it is still softer, being reduced to a thin paste; the two substances and the various parts of the brain can no longer be distinguished; they have both assumed an uniform greenish colour, or one resembling that of the dregs of wine, and exhale a most horrid fetor. Here and there may be seen in the mass of the decomposed organ filaments surrounded by fatty granulations, which are perhaps the blood vessels. At a still later period, the fetor no longer exists; the cranial contents have a greater degree of consistency and form now a mass of a greenish gray colour. Frequently at its surface it has a yellowish appearance, and at other times it is full of perforations formed by maggots. In every case the substance of the brain decreases by degrees in bulk, and finally does not occupy more than a tenth or even a twelfth part of the cavity of the cranium, and in this case is frequently saponified. M. Orfila has found a portion of the brain to remain after the entire destruction of all the other viscera, in every case excepting one, in which the whole of the brain had been destroyed by worms and the cranium was entirely empty. The cerebellum and spinal marrow present the same changes as those above described, but in general they become much softer. The pia mater and arachnoid tunic observe the same changes as the other serous membranes. The dura mater presents but little change at first, but subsequently, becomes almost always, greenish, softened, and tears fre-

quently into shreds, having a bright slate colour. The presence of a serous fluid in the ventricles of the brain, the spinal canal, or in the cells of the pia mater, is not to be viewed as a cadaveric phenomenon, nor as a pathological effect excepting inasmuch as the fluid met with differs in its quantity and properties from that always existing in the brain &c. in a normal condition. The part at which this fluid is found accumulated will depend in a great measure upon the position in which the corpse is placed during examination, which may be such as to favour the flow of the fluid towards the cranium or the spinal cavity.

The *nerves* are in a perfect state of preservation even many months after interment, and only differ from their normal condition in presenting a less degree of solidity and having a slight rose colour.

Globes of the Eye. A few days after interment, the cornea becomes flattened and opaque, and the humours of the eye assume a clear brown or reddish hue. After a few weeks the eyes have so far sunk that they appear at first to have been entirely emptied of their humours; the cornea has become more opaque, and the fluids they contain of a deeper colour. The latter have now very little consistency and are of the colour of bister, which appears to arise from the choroid coat; the lens as well as the several membranes of the eye still preserve their usual characters. The eyes, in general, are found entire at the end of the second month. Subsequently the globes become empty, no part of them remaining but their membranes and the lens. In a short time no part of them is met with excepting the remains of the sclerotica of a brownish colour. Finally nothing is found in the orbits but a mass of the fat peculiar to dead bodies. Few of the organs are destroyed so rapidly as the eyes. In the exhumations made at Bicêtre, M. Orfila has never found a vestige of them remaining four months after death.

Organs of respiration and of circulation. Twenty-four or thirty-six hours after death, if the last agony has not been protracted, that portion of the lungs which was the most depending during the period when the body loses its heat, will be found engorged. If, as is generally the case, the subject is placed on the back, and the situation has not been changed subsequently, the congestion of blood will be found to occupy the dorsal portion of the lungs; it will occupy on the contrary their

anterior or inferior portions if at the moment of death the body has been placed upon the abdomen in a vertical situation, as when suspended, and this attitude is not changed until the body has become cold. If immediately after death the body is turned, there will be found, in what was the most depending portion of the lungs at the moment of death, but slight traces of engorgement, and the blood will be accumulated in that portion which was most depending during the period of cooling. In either case the engorgement may be to such an extent as to diminish the cohesion of the parenchyma of the lungs and to press out entirely the air from the part which the blood occupies. The bronchia, of course, become of a uniform red in the neighbourhood of the engorgement. If the final agony has been protracted, or death has been caused by a disease of the thorax causing a considerable impediment to respiration, the congestion will occupy the part of the lungs which was the most depending at the instant of death. From what precedes it will be perceived, that we should deceive ourselves if we were to attempt to decide, from the lividity of any particular part of the lungs, the position of the body at the moment of death or during the cooling process; the duration of the agony and the nature of the disease must also be taken into account.

This congestion of the lungs gives to them many times, particularly at their posterior part, a colour more or less black, which has in certain cases been mistaken by the inattentive physician for the result of gangrene or sphacelus.

After interment, the lungs preserve their ordinary appearance for a considerable time, they soon however became emphysematous. It is only in bodies that have died recently that the engorgement of the posterior part of these organs exists. At the end of several months the structure of the lungs is perceptible and the fact of any pathological lesion of them may be determined. Subsequently, they became more or less collapsed, no longer filling the cavities of the pleura; they are now of a bottle green colour more or less intense, inclining to a slaty or bluish hue. Their structure can at this period seldom be detected. They are soft, easily torn, and contain a brownish fluid. At a still later period all that remains of the lungs are two small masses attached to the depressions on each side of the vertebral column. These are occasionally covered with a whitish

mould. They lose by degrees their humidity, become more and more thin, of a black colour, and finally are entirely destroyed.

The mucous membrane of the *Trachea* and of the *Larynx* becomes at first of a clear olive green, or of a dark green inclining to black. Frequently, however, especially towards the upper part of the canal, it has a gray and slightly violet colour with here and there blackish points. At a later period the colour of the membrane is red, or similar to that of the dregs of wine, particularly the part which corresponds to the cartilaginous rings. Finally, the colour becomes black or deep brown. In certain cases the epithelium of this membrane is detached in small shreds of various colours. In some instances the membrane presents a number of grayish granulations, resembling fat, about the size of pin heads, which appear to be formed of other smaller granulations. These bodies, frequently very hard, as well as the detached portions of the epithelium, may be mistaken at first sight for foreign bodies introduced into the trachea. Besides the above changes, the whole tube becomes by degrees softened, the cartilages lose their elasticity, and, after a certain time, there remain only the cricoid and thyroid cartilages separated from each other, as it were worm eaten, semi-transparent, of a yellowish colour, spongy, and brittle, with a few of the cartilaginous rings, very flexible and of a yellowish brown. At a still more advanced period not a vestige of these organs is to be detected.

The *diaphragm* retains for a very long time its normal appearance; M. Orfila has frequently been able to detect its aponeurotic centre and its muscular fibres in bodies that had been interred for 6 and 7 months. Subsequently it becomes thinner, more dry, of an olive or brown colour, and is frequently perforated. It is finally reduced to a brown and very thin membrane presenting neither the form nor texture of the muscle. In certain cases upon both its surfaces, hard white granulations are found, formed of the phosphate of lime.

Heart and Blood-vessels. For the first twenty-four or thirty-six hours after death the heart is found in its normal condition. Frequently it is pale, and in other cases it presents a deep red colour, or only red lines, either in the thickness of its parietes or on its internal surface. At a later period its consistency may be diminished. The arteries and veins are occasionally on their inner surface of a red colour, either over the

whole of their lining membrane or only in stripes—more generally, however, the vessels present no change from their ordinary condition. The redness is found in the bodies of those who have died of various diseases; it is to be considered, therefore, as a cadaveric phenomenon, produced evidently by the transudation of the blood after death.

If the heart be examined some time after interment, it will be found sensibly softened, flaccid, of a violet colour more or less decided, less often of a greenish hue; it may be empty or containing blood, partly fluid and partly coagulated. The colour of this organ, especially on its interior, becomes by degrees deeper, and finally black. The valves present frequently, brownish spots, the effect of a transudation. In other cases, there is observed on the inner surface of the auricles, or exteriorly, white and hard granulations, like sand. At a later period, the heart collapses and is reduced to a tongue-shaped mass of a blackish brown colour, thin, often torn at parts, and very pliable, resembling a double gum-elastic bag, the parietes being capable of distension so as to enable us to detect the two ventricles. The original texture of the organ is, however, no longer perceptible; a few blackish filaments, however, remain, which are the remains of the columnæ carniæ. Finally nothing is left but a black layer, resembling bitumen, which is easily washed away with water. The more rapidly the destruction of the thoracic parietes takes place, the more speedily the disorganization of the heart will be found to occur.

The pericardium assumes at first a reddish hue, then a deep red, and finally a blackish brown. It becomes softened by degrees, and finally disappears. M. Orfila has frequently found it to contain a greater or less quantity of a bloody fluid.

Bloodvessels. Two or three months after interment, a certain amount of black blood, either fluid or coagulated, is found in the veins or arteries. In some cases, however, the author has met with no blood at the end of one month after interment, and he has frequently found, in place of blood, a bloody fluid of a rose colour, eight or nine months after burial. The parietes of the vessels become first rose coloured, then red, afterwards deep violet, and finally brown. These hues are most decided on the interior of the vessels; the lining membrane assumes, however, in some cases, a bottle green colour. The

colour is sometimes uniform, and in others in stripes or patches. For several months, the different coats of the bloodvessels may be readily separated from each other. In one instance M. Orfila found the aorta entire after the body had lain in the ground fourteen months.

Digestive canal. Before entering upon the changes which the stomach and intestines undergo subsequently to interment, M. Orfila considers the state in which they are ordinarily found after death, from various diseases other than inflammation of these organs, and the changes which they undergo before the body is deposited in the grave.

Whatever is the disease which occasions the death of aged persons, it being such chiefly that M. Orfila subjected to examination, whether cerebral hemorrhage, softening of the brain, pneumonia, pleurisy, or diseases of the heart, &c. scarcely ever is the mucous membrane of the digestive canal in a state of perfect integrity. Very generally we recognize in the stomach and intestines different alterations, which, though they indicate a change from the perfectly physiological condition, can but in a very few cases be considered as morbid. These kinds of alteration are often much more decided, than those produced even by very intense diseases of the alimentary canal, which have of themselves caused the death of the patient. Of all the diseases not seated in the digestive tube, those which occasion the most remarkable changes in its lining membrane are undoubtedly those of the heart and large vessels; and as there are few individuals of seventy years of age who die without some disease of the latter organs, there are few in whom, therefore, some change in the gastro-intestinal mucous membrane does not exist after death. This change, which so long as it is confined to a mechanical injection, more or less considerable, of the blood vessels, is to be considered still as physiological, may nevertheless be carried so far as to be strictly morbid. Thus the blood accumulated in the permeable tissues of the alimentary canal, acting as a foreign body, may in the end not unfrequently induce a species of inflammation, if the expression be allowable. In which case the redness is of a cherry, or violet hue, or similar to that of the dregs of wine, and penetrates deeply into the substance of the membrane throughout its whole extent, or in some particular parts is more decided

than in others. In some cases the blood thus accumulated is exhaled into the alimentary canal, giving rise to consecutive hemorrhages. But before it attains to that condition which is to be considered as morbid, the mucous membrane passes through different states, in which the action of the intestines is but little, or not at all, impeded, and which may be regarded very nearly as physiological. The œsophagus is in general more injected than in its normal state—here and there are observed on its mucous membrane, especially towards the cardia, violet spots of various sizes, resembling in every respect ecchymoses. These are beneath the epithelium which is here thicker and denser than that of the gastric mucous membrane, if, indeed, the latter have any. The diameter of the œsophagus is frequently partially contracted; at the parts in which the contractions have taken place, there exist longitudinal folds, and the parietes of the tube appear there to have an increased thickness and density. In other respects no traces whatever of inflammation can be detected.

The stomach presents an infinite variety in regard to colour, consistency, volume, and diameter, &c. The peculiar structure of its mucous membrane causes the latter to become very readily engorged with blood whenever there exists an obstacle to its free circulation; it is therefore very rare that we find this membrane white with a light and uniform rose tint, which is its true physiological colour. It is also to be recollected that this membrane is very readily penetrated by any colouring matter which may be contained in the stomach; and the tint thus produced cannot be entirely removed by the most careful washing, however frequently repeated. Thus wine and decoctions of bark, redden this membrane, and may lead an inattentive observer to suppose that this colour is owing to an injection of blood: whenever the stomach contains a red fluid, we should be cautious, therefore, to ascertain whether the redness of its mucous coat is not produced by it. The colour of the latter will, in that case, be uniform and destitute of those arborescences and vascular injections, which are the characteristics of a distended state of the capillaries; by washing and maceration, also, the colour will in part, if not entirely, be removed.

When the discoloration of the gastric mucous membrane is the result of a stasis of blood in its vessels, it presents va-

rious shades, from a light rosy tint, to a deep black, and this without the function of digestion being in any notable degree deranged. The great curvature of the stomach, its large extremity, and particularly its pyloric portion, are the seats of this congestion, either from the capillaries being there more developed, or from the situation of these parts favouring the injection. We observe very rarely a uniform discolouration, but most generally patches of a rose colour, of a bright red, of the colour of the dregs of wine, a brown, slate colour, or even black; these patches are as large as the palm of the hand, sometimes larger and sometimes less. In the same stomach, it is not uncommon to observe all the above shades, separated frequently by marked lines: the mucous membrane has frequently a spotted appearance, resembling what occurs in scurvy; its surface is either smooth, polished, or rough, covered with small points or eminences, or, as is frequently the case, spread over with very small fungous excrescences. In many cases, also, large bluish veins wind beneath the mucous membrane of the stomach and small intestines, which has a whitish colour somewhat inclining to an ash. In all these cases the individual, during life, does not experience any inconvenience referable to the stomach. The consistency of the gastric mucous membrane is variable in different parts of its extent—in some parts it has so little adhesion, that it may be removed by rubbing it with the back of the scalpel, and is mixed with the mucous, from which it can scarcely be distinguished, while in other cases it is removed with difficulty by the edge of the knife. The parietes of the stomach are sometimes translucent; the only opaque parts being formed by the vessels, of a very large diameter, which pass in a serpentine course through the substance of the organ. In these cases the volume of the stomach is considerable; being sometimes double what it is ordinarily. In some cases the organ is contracted—its parietes being thicker and firmer than ordinary: the mucous membrane is in these instances gathered in a number of folds, in general longitudinal. Partial contractions and dilatations are also met with—the stomach presenting the form of a gourd; towards the contracted portion the mucous membrane is folded in the manner already noticed. In some stomachs the mucous membrane is in great part removed about the large

extremity, without any disease having existed in the digestive tube. In these cases, however, the circulatory apparatus is enormously developed. The foregoing are the most remarkable alterations which exist in the stomachs of aged persons who die of diseases of the heart. It may be said, that in every instance a latent disease of the stomach existed; to this M. Orfila replies, that the changes alluded to occur very frequently, and the manner in which they are effected being susceptible of a plausible explanation according to physiological laws, he prefers considering them as modifications coincident with a state of health, than as exceptions to the ordinary pathological conditions.

The intestines, especially those which fall within the pelvis, present modifications similar to those of the stomach. The *duodenum* is frequently injected, red, brown, &c., but less so in general, than the stomach; the bile which remains in it, gives to it a shade of yellow, or of green, which readily distinguishes it from the stomach, excepting in those cases in which the bile has passed into the cavity of the latter.

The jejunum is more frequently than either of the other intestines exempt from change. It is in general coloured yellow or green, by bile, but it is rarely the seat of any considerable degree of injection, of hypertrophy or atrophy of its parietes, or of dilatations, or contractions. The *ileum* as frequently as the stomach, presents the same changes of colour that were noted in speaking of the latter. This arises probably from the very depending position of this intestine, when the body is laid upon its back, the injection of its vessels occurring probably during the last moments of life, or immediately after death. The colour of its mucous membrane is most frequently a very deep red, or precisely like that of the dregs of wine. This colour occupies the whole of the membrane; being deeper, however, at particular points. The caliber of this intestine is often contracted, its parietes appearing then to be hypertrophied. In other cases, but rarely, its diameter is more enlarged, and its parietes thinner than ordinary; this thinning of the coats is sometimes so great as to cause them to be pellucid or transparent, and to have the appearance of a simple serous membrane. Alternate contractions and dilatations likewise exist occasionally. In the *colon*, the alterations described are always to a

less extent and less frequent than in the other parts of the digestive tube. Thickening of its coats, contraction, and dilatation of its diameter, are the most frequent changes it presents, injection of its vessels the least frequent. The foregoing remarks relate to those subjects who have died from diseases of the heart. In an individual in whom the heart was not diseased, aged sixty-five, but who died of the effects of a burn, at the end of eight days, the gastric mucous membrane was of a grayish colour, and that of the intestines of an ash colour. In a woman sixty years old, who died of old age, the lining membrane of the stomach was of an ash colour, that of the duodenum whitish, with a slight shade of yellow, that of the cœcum grayish, and of the rest of the intestines whitish. M. Billard from whom these two facts are borrowed, places among the cadaveric changes which may occur in the intestines of individuals who have laboured under no disease of the gastro-intestinal mucous membrane, spots of a yellow colour, more or less extensive, or simple bands of this colour spreading over the mucous surface of the two first intestines.

The changes in the colour of the gastro-intestinal mucous membrane though met with in the middle aged, are not so numerous as in the aged. If the individual dies suddenly during digestion, of a disease not affecting the alimentary canal, the inner membrane of the stomach is ordinarily rose coloured, while that of the intestines is gray, ash coloured, or white, with or without patches of yellow; on the contrary if death has not taken place during digestion, and has not been sudden, the colour of the inner surface of the alimentary tube may be more varied and of a deeper hue, although it be not the seat of disease.

Spots of a red, livid or blackish colour, irregular and extended, similar to those met with on the surface of a corpse, are not unfrequently seen under the serous membrane of the intestines, or in their very tissue. They occupy the portions of the intestine which are the most depending at the period when the body loses its heat, and depend on a stasis or congestion of blood in the capillaries—they cannot be considered as the product of inflammation.

M. Orfila considers next the changes which he has observed in the stomach and intestines subsequent to interment, without pretending to say how far all of them are a necessary effect of

prolonged inhumation; for it will be perceived from what has preceded, that a discolouration or even softening of the mucous membrane not unfrequently occurs even previous to the body being deposited in the earth.

The mucous membrane of the *mouth*, *palate*, *pharynx*, and *tongue*, becomes at first greenish and sensibly softened. The colour becomes by degrees darker, and finally black. All the parts within the mouth lose their moisture, so that after a few months the tongue is reduced to thin and very dry membrane. The internal membrane of the *œsophagus*, becomes at first of a green colour more or less dark, particularly at its superior part; inferiorly it has often a reddish hue—when the latter is of a green colour, it has often been found spotted with red or violet. In the bodies of old men M. Orfila has found on the inner surface of the œsophagus small varicose tumours filled with fluid black blood, and which were evidently the result of disease. At a later period this canal becomes by degrees of a brown colour, and is finally destroyed in the same manner as will be noticed when speaking of the stomach.

The stomach contained ordinarily but a very small quantity of fluid. At first its mucous membrane was found to be of a yellow colour, grayish, bluish gray, or of a bottle-green, all these tints were spotted with red, or violet. Near the pylorus, most generally, the membrane presented a patch of a bluish hue, more or less extensive, and of a deeper colour than the rest. At a later period, the mucous membrane was found elevated at certain points, by collections of gas beneath it of the size of a pin's head, or larger; by this time it had frequently acquired a rose colour, changing afterwards to reddish violet, and had a thin coating of a brownish fluid, similar to thin mud. At a still later period, it was found to exhibit a grayish white, with many spots of blue, without the least appearance of redness. The stomach, which had already undergone a considerable softening, became now greatly altered, and soon after all that remained of it was a portion in the form of a cylinder with a cavity; finally it presented a mass of dry membranes, capable of being separated into coralliform filaments, and soon afterwards, instead of this, was found a moist black substance, resembling the grease of a wheel, covered here and there with a greenish white mould in the form of small globules, and of

patches resembling very much the earthlike litchens found upon the trunks of old trees. Many months after interment, the three coats of the stomach were separable; the muscular and serous not always presenting the same changes in colour as the mucous; in general they were of a grayish or yellowish tint, then rose, and finally again became grayish. The portions of the serous membrane corresponding to the liver, were sometimes found of a reddish colour, especially soon after interment.

Intestines. These at first became of a gray colour, sometimes they were slightly reddish on their exterior, and gray within. In some cases, however, the mucous coat assumed a red or violet colour in parts, and where it was covered with fœces of a yellowish cast. Subsequently the thickness of the parietes was found to diminish; they began to be torn and to adhere to each other; subsequently they became brown, more dry and adherent, so that it was difficult to separate them from each other. They formed now a mass which was closely applied to the vertebral column. For a long time they were found to preserve their fœcal contents. They finally underwent the same changes, and were destroyed like the stomach. For a long period after death, even when there existed no longer any traces of the thoracic viscera, some vestiges could be discovered in the abdomen of cylindrical portions of the intestinal tube, although no remains of any poisonous substance could be detected, to which their preservation might be referred.

The *omentum* and *mesentery* became at first grayish, or rose-coloured and softened; soon after they became dry, lost their suppleness, and presented a tendency to become changed into the fat peculiar to dead bodies. In other respects, these membranes remained for a long period without any very remarkable change.

The *liver* became at first softened, and of a brown colour, its peritoneal covering could be detached with ease, and was soon destroyed, at least in part; after a few weeks the normal structure was no longer perceptible, the large vessels which penetrate it could, however, still be traced, having their exterior surface frequently covered with a sanies of the colour of dregs of wine. Subsequently granulations were found upon the surface of the liver like sand, and formed of the phosphate of lime, and

in some instances the interior of the vessels contained other soft granulations, of a white colour, formed evidently of cadaveric fat. At a still later period the liver was found reduced to a flattened mass of the thickness of half an inch, of a blackish brown colour, somewhat dry, which being cut into divided itself into leaves, between which was found a solid substance, of a brown colour, resembling bitumen. The remnants of the organ became more and more thin, and finally black, coralliform and separated by the slightest touch. Frequently, however, in place of drying, the liver became transformed into a soft, blackish substance, resembling the grease of wheels, in the midst of which was seen a yellowish substance resembling fat.

The *gall bladder*, either empty or containing a thick bile of an olive green colour, was found almost always but little changed, even when the liver had undergone very considerable alteration.

The *spleen* very soon became softened, and could be easily torn, it became more and more of a brownish colour, and its structure was no longer to be recognized. It soon after was found reduced to a blackish paste, resembling the grease of wheels, or the mud of a gutter, which impregnated and coloured the parts in its neighbourhood. In certain cases the spleen becomes of so fluid a consistency as to resemble decomposed blood.

The *pancreas* first becomes softened, and then of a deeper gray. The softening proceeds so far as to reduce the organ into a paste, at first grayish, but which becomes subsequently more and more brown.

The *kidneys* do not become softened so rapidly as the spleen; they, however, soon lose their consistency—the exterior membrane is readily detached. Their pelves and calices may still be recognized, even when the structure of the cortical and tubular portions is entirely destroyed. These organs become finally converted into a brownish paste like the grease of wheels, and are soon destroyed.

The *bladder* undergoes no remarkable change for the first weeks after interment. It is often, however, the seat of a submucous emphysema. Subsequently it collapses, and experiences very nearly the same changes as the intestines. It is destroyed, however, at an earlier period than the latter.

Genital organs. Although softened, these preserve for some time, their form. In the male the cavernous portion of the penis soon collapses. Subsequently the penis is flattened, resembling the skin stripped from an eel, the form of the organ being no longer evident. The scrotum, at first very much distended with gas, becomes by degrees dry. The testicles diminish in volume, acquire a vinous tint, and are transformed into fat. Subsequently the penis resembles a tube of a somewhat firm consistence, the parietes being in contact; when these are separated it assumes the form of a hollow cylinder. The scrotum and its contents are reduced to a soft, brownish, moist substance, with here and there a few membranous shreds, and covered with a black viscid coating full of maggots. At a still later period the organs of generation are so far destroyed that the sex of the subject cannot be determined; the pubis is still, however, covered with hair, which is firmly attached to the membranous and carbonaceous mass into which the soft parts have been reduced. In females, the genital organs become first softened, after which they are reduced to a membranous mass, from which we are not able to determine the sex of the corpse. The uterus also becomes softened, then flattened, and at the end of a few months is so changed that it cannot be recognized, excepting from its situation. The fallopian tubes and ovaries are very early destroyed. The broad ligaments present a greater resistance to the putrefactive process, and become of a grayish colour.

Developement of gases. Subsequently to death all the large cavities of the body, as well as those of the heart, blood vessels, arteries, &c., and the cells of the cellular tissue may become distended by gas, resulting from the decomposition of the fluids. This is especially the case after a sudden and violent death, preceded by acute pain, violent efforts, &c. In these instances the body becomes, in a few hours, emphysematous to such an extent as to swim in water.

Having briefly examined the phenomena which the different organs of the body present in the various stages of putrefaction, it will be of advantage to present a sketch of the principal changes which, according to the investigations of our author, are presented by the head, thorax, abdomen, pelvis, limbs, &c.

The *head* is still attached to the spinal column, and preserves

all its relations, even when the eyelids have become very thin, and so sunk in, that, at the first view, the orbits appear to be only half filled. The globes of the eyes are found collapsed at a very early period, the same is the case with the nose; the lateral portions alone, however, are, in many instances, all that have become flattened. Soon after, the hair becomes detached from the scalp; the eyelids, soft parts of the nose, and even the lips, already extremely thinned, become destroyed. A portion of the scalp is also destroyed, and the bones, where laid bare, are coated with a thin layer of a fatty kind of matter of a brown colour. At the posterior part of the head there exists an infiltration beneath the skin of a sero-sanguinolent fluid: this fluid is also found beneath the periosteum; this infiltration arises from the supine position of the dead body. In these parts the integuments, although still tolerably firm, are readily detached. The ears and cheeks are at this period in a state of considerable preservation; over various parts of the cranium and face, a soft green or whitish, and cottony mould is to be observed. Later, between the third and fourth months, in the examinations, at least, made at the Bicêtre, every portion of the face was destroyed; all that remained was a few membranous fragments, particularly about the malar bones. The inferior maxillary bone was still attached to the temporal, and the head to the spine: a slight force, however, served to detach them. At a still later period, the two jaws widely separated, allowed the basilary apophysis of the occipital bone to be seen. The jaws were still united by some slight remnants of the soft parts: the attachment of the head was now very slight. Finally, the bones of the head and face are completely disarticulated, and deprived of their natural covering; the former being coated with a paste composed of the hair mixed with earth, which being removed, shows them of a bright brown colour, spotted here and there with large patches of a deep brown.

Thorax. The thorax rarely experiences any change for the first three months after interment. The cavities of the pleura may contain more or less fluid, but this effusion is rarely the result of putrefaction. The collapse of the thoracic viscera, and especially of the lungs, is not so marked, that on opening the thorax any striking vacancy in its cavities is observed. A short time subsequently, the thorax becomes depressed; the sternum

appears to touch the vertebræ, and may be readily removed with the hand; many of the ribs begin to separate from their cartilages, and the intercostal spaces are only closed at certain points, by a grayish membrane which retains the ribs in contact. When the thorax is opened its cavities appear empty, and are lined by a membrane resembling, in colour and consistence, gray paper moistened; it is impossible to say absolutely of what organs this membrane is the remains. Still later, the ribs are almost completely divested of their flesh, and scarcely adhere to the sternum, which has a brown colour, and is covered with a mould. The sternal cartilages are very nearly separated from the sternum and ribs. Those which remain are black, perforated, still supple, and are detached and broken with ease. Their fracture is attended with a slight noise. The cavities of the thorax are covered with white or coloured mould, and the intercostal spaces are, in parts, already deprived of their soft parts. At a still later period, the sternum and costal cartilages are separated, their remnants are found scattered within the thorax and abdomen. At a still more advanced period the chest is entirely destroyed. The sternum divided in two, occupies what were the cavities of the pleura. The ribs are nearly all detached, and lie one upon another at the sides of the corpse. They are covered with a black substance, resembling a soft vegetable extract, and which is evidently the remains of the soft parts; they are more brittle than in their natural condition, and their interior is very dry and porous. Scarcely any of them retain their cartilages; these are very supple, of an olive gray, but covered with a brownish coating; they are, as it were, worm-eaten in places, and appear extremely porous, their internal structure being evidently destroyed.

Abdomen. The abdomen does not experience, for a long time, any particular change, excepting the green, yellow marbled with green, or ochreous colour of its integuments. By the third or fourth month, at least in the observations of M. Orfila, it collapses; soon after, its parietes are reduced to a thin membrane, sometimes humid, but more frequently dry, brown, covered with earth and mouldiness, very easily torn, and attached, particularly below, to the spinal column, or to the bones of the pelvis. When the parietes are removed, the layers of

which it is composed are, as it were, soapy, of a yellowish white, and ordinarily separated from each other by an immense number of worms. Some weeks subsequently, the parietes of the abdomen are so firmly adherent to the spine, that they can be detached with readiness only at the sides, where they form beds of membranous layers, of a dark red within, and occasionally encrusted with the fat of sepulchres on their outside. A very considerable depression is remarked extending from the xyphoid cartilage to a short distance below the umbilicus. Sometimes, in place of having a smooth surface, the portion which is attached to the spine presents depressions and elevations. At a still later period, the abdominal parietes are reduced to a few membranous shreds of a brown, olive, or black colour, frequently perforated at several points, still adhering to the lower ribs, to the pubis, and the posterior part of the crest of the ileum. The remains of the parietes appear to be composed of the peritoneum, and perhaps of portions of the muscles, very dry, and in some measure, altered in their appearance. Finally, the whole is destroyed, a moist black substance adheres to the sides of the vertebræ, having the shining appearance of the grease of wheels. This forms, in some places, a layer half an inch in thickness; it is evidently the remains of the soft parts. The preservation of the abdominal viscera depending upon the integrity of the parietes of this cavity, it will be interesting to examine, cursorily, the period when these latter become destroyed. This, however, frequently varies, from circumstances difficult to determine; thus, in two subjects, no traces were found of the abdominal parietes; in the first, nine months eighteen days, and in the second, thirteen months sixteen days after interment; while in another which had been buried seventeen months six days, a portion of these parietes still remained, and what is still more remarkable, in another subject which had been buried twenty-three months five days, the anterior walls of the abdomen were nearly entire under the form of an apparently tanned membrane, in which the depression of the umbilicus was perceptible, and to which shreds adhered of a brownish, or blackish colour, similar to tobacco leaves dried, and then moistened. These shreds were united together by soft filaments, similar to tinder, and readily torn. All these bodies were buried in the Bicêtre, alongside of each

other, in coffins of the same species of wood, the boards of which were similar in thickness, and they were all enveloped in shrouds. In another subject which had been interred two years nine days, although it was buried in an extremely thick coffin, and enveloped in a shroud of linen, no trace of the abdominal parietes remained. The cavity of the abdomen seldom contains any fluid, at least when none has existed before death. The abdominal viscera have a tendency to become more and more dry; they have no appearance of humidity a few months after interment. The length of time during which the abdominal viscera will be preserved is somewhat surprising to those who are unaccustomed to these species of exhumations. So long as the parietes of the cavity are in a state of integrity, the subjacent viscera will be found to preserve their integrity, form, and relations; until at least the collapse of the abdominal parietes has caused them to become adherent to the spine, and the size of the organs within the cavity has become considerably reduced. At a later period there is considerable difficulty in recognizing the various organs: if we are able to detect the liver, spleen, and kidneys, it will be rather from their relative situations than their form: in place of the stomach and the intestines, we perceive only a mass of double membranes, which being separated, exhibit the cavity of the stomach, and part of that of the intestines. These membranes, which are dry, of a greenish brown colour, thin and perforated at certain points, do not answer to the whole extent of the alimentary tube, nor do they permit us to distinguish in them the different parts and coats of which it is composed, and still less the morbid alterations which may have been produced by the disease existing previously to death. At a still later period, we are presented with merely a mass of dry shreds, which is frequently filled with worms, and may be reduced to coralliform filaments. At one part of the mass portions of a cylindrical form may be detected, forming part of the intestines. Finally, nothing remains but the black matter already alluded to when speaking of the destruction of the parietes.

The *limbs* of the corpse for the first weeks after interment undergo no remarkable change; where the arms are in contact with the thorax and abdomen the skin has its natural hue, while in other parts it may be changed in colour; here, also, there is

found a viscid, reddish mucus, by which the parts in contact are so united that on raising up the limb the epidermis is detached. Still later, in proportion as the soft parts become putrid, the bones are laid bare, but still preserve their articulation to each other, the ligaments not being as yet destroyed. Those portions on which the flesh still remains present one or other of the following conditions:—1. The soft parts are impregnated with earth, a white mouldiness, and portions of the shroud, having the appearance of a solid substance, composed of layers, under which vacuities are perceptible to the feel. This hard coating is evidently composed of the fibrous and aponeurotic elements, without the least admixture of cadaveric fat. On cutting into it a considerable quantity of flies and worms make their appearance; at other times this layer has a cellular and fatty feel, and is, at many points, an inch or two in thickness, having exteriorly a crust formed of cadaveric fat, while interiorly it resembles rotten wood, intermixed with soft filaments, the animal nature of which is, at some points, distinguishable. 2d. The soft parts may be reduced to a very thin, dry, and grayish layer, covered here and there with a white mould; this layer sometimes consists of two lamina, the most external formed of the integuments of the limb, and the internal of the aponeuroses; or the soft parts may form one thin, dry, spongy, and filamentous case to the limb, of the colour of tinder, in which neither nerves, vessels, nor muscles can be recognised. At a still later period, the bones composing the limbs may be separated by the slightest force, some shreds of the soft parts only, retaining them in contact; soon afterwards the bones have separated, though still retaining their relative position. Subsequently the bones have fallen apart, and are found in the coffin, shroud, or in the earth.

M. Orfila next considers the changes which the coffin and the clothes in which the corpse is enveloped, undergo: a notice of these, and of some interesting remarks which he subsequently makes in regard to the insects found in bodies after interment, want of room obliges us to omit.

The question is next considered whether the various alterations in the different tissues that have been noticed occur at fixed periods. From all his researches our author has found that bodies interred at the same time do not become putrid

with the same facility; some being reduced to a skeleton, while others have scarcely undergone any change. The causes from which this difference results, have reference particularly to the age, constitution, sex, thinness, or obesity of the bodies interred, and to their mutilation or integrity, the nature and duration of the disease by which life has been destroyed, the greater or less duration of the final agony, the period at which interment has taken place, the deposition of the eggs of various insects on the surface of the body, the nature of the soil, and the depth of the grave in which the body is deposited; whether it is committed to the ground naked or cloathed, with or without a coffin; the thickness of the boards, and the nature of the wood or substance of which the latter is composed; the temperature and humidity, &c. of the atmosphere. A few words in detail upon each of these causes.

Age. M. Orfila has found, all things being the same, that the bodies of very young infants are destroyed much more rapidly than those of persons of more advanced ages.

Of the constitution the influence is more difficult to establish, than that of the age, but under similar circumstances, bodies of different temperaments putrefy in different periods of time. M. Orfila has found in bodies, in relation to which all circumstances have had a perfect identity, that at the same period after interment putrefaction in one case had arrived at its height while in another it had scarcely commenced. This difference can only be attributed to a difference in constitution, causing the tissues to differ in density and to be imbued with a varied amount of fluids.

Sex. The predominance of the lymphatic temperament in females, and the greater amount of fat which is contained in their subcutaneous cellular tissue, cause their bodies to putrefy after interment more quickly than those of males.

Emaciation or obesity. Experience proves that obesity favours putrefaction. The greater or less degree of fat which the body contains, modifies in a very particular manner the changes which it undergoes, as we shall see when we come to speak of saponification.

State of mutilation or integrity. M. Orfila found that solutions of continuity of any extent augmented considerably the rapidity of putrefaction. Parts, also, bruised, ecchymosed, or

which from any cause contain effused blood, putrefy more quickly than others, even when there exists no loss of substance or solution of continuity of the skin. In parts in which a contusion has existed before death, the putrefaction proceeds with great rapidity.

Nature and duration of the disease. Putrefaction is in general more rapid in those bodies in which death has been produced by an acute disease, than where death has resulted from chronic affections that have induced emaciation. The cause of this is the greater amount of fluids which the body contains in the first instance. The bodies of those who die of hemorrhage putrefy less promptly than those in which the vessels are distended with blood, as happens when death has occurred from asphyxia. Bodies in an anasarcous condition putrefy even more quickly still. Those, the death of which has resulted from small-pox, or other pustular disease of the skin, putrefy more quickly than others; all parts in which a morbid amount of blood is contained putrefy very promptly.

Phenomena immediately preceding death. When death has occurred suddenly or after a long disease, when the final agony has been long or short, when death has been the result of a virus introduced into the blood, the progress of putrefaction will be more or less rapid, without our being able very accurately to appreciate the influence of each of these phenomena.

Period of interment. The more short the time that elapsed between death and burial, the more slowly will the body be attacked with putrefaction; when the interment has been delayed several hours or days after the commencement of putrefaction, it may happen, especially in summer, that in one month after burial putrefaction will be as far advanced as it would have been only after seven or eight months had the interment taken place twenty or twenty-four hours after death.

Insects. The greater the number of the eggs of insects which are deposited upon the surface of a body after death and previously to interment, the quicker will be its putrefaction; it is by destroying the tissues of the body that the larvæ produced by these eggs are nourished.

Depth of the grave, &c. The deeper the grave, all other

circumstances being the same, the more putrefaction will be retarded.

State of the body, naked or clothed. M. Orfila is of opinion that the more immediately the body is in contact with the earth, the more easily does putrefaction take place. Thus a body buried naked putrefies much more promptly in a similar soil than if it had been enveloped in a shroud and enclosed in a leaden coffin. Putrefaction takes place more slowly when the coffin containing it is of oak boards an inch thick, than when it is enclosed in a coffin of the same kind of wood only a few lines thick, or in one made of thin boards of fir. The more perfectly then the envelopements of the body protect it from exterior agents, the more slow will be the progress of putrefaction and vice versa.

State of the atmosphere. It is hardly necessary to say that during a warm and humid condition of the atmosphere bodies putrefy with much greater facility than under opposite circumstances.

According to Burdack the changes experienced by a corpse after interment may be divided into three periods. In the *first* the whole body becomes swollen, in consequence of the development of gaseous substances in the cavities and tissues. This period continues many months. In the *second*, the soft parts become converted into a green or dark brown pultaceous matter, the body diminishing in volume from the escape of the gases. This period continues two or three years. In the *third* period, the gases have entirely escaped from the body and the fetor is replaced by a mouldy smell; all that remains is a greasy, brownish, friable earth, which after a considerable number of years falls into dust and mixes with the earth in which the body is interred. This statement, M. Orfila has found to be incorrect. Bodies examined 10, 15, 40 or 50 days after interment were found to be reduced in bulk, and not swollen. Our author does not deny that this swelling may take place when putrefaction commences, but only that it does not invariably; when it does take place it continues for a very short period. In the second period the soft parts do not invariably become converted into a pultaceous substance; most generally, M. Orfila has found them dried and reduced into a lamellated or filamentous body, some even resembling pasteboard. So far from this

period occupying two or three years, M. Orfila has in the majority of cases found the bodies reduced to a skeleton at the end of 14, 15 or 18 months, even when they had been buried in coffins and wrapped in clothes. The small quantity of fatty matter which remains after the putrefactive process has been completed is not, as Burdack describes, earthy and friable, it is, on the contrary a kind of soft, oleaginous cambouis, resembling lard strongly coloured.

In regard to the time occupied in the destruction of a body placed in the earth, this is varied, as we have already remarked, by a great number of circumstances. The progress of destruction presents likewise in various bodies differences which are often very remarkable.

Influence of the soil in which the body has been interred upon the progress of putrefaction. M. Orfila during seven weeks in spring made a number of experiments, by burying at the same time portions of the same corpse, enveloped in the same kind of cloth, one foot deep in different kinds of earth brought for the purpose to a corner of the garden of the faculty of medicine at Paris. These earths were, *sand* decidedly siliceous and ferruginous; *mould; garden soil;* and *calcareous* earth from the Bicêtre. Of these experiments, the following are the results.

Putrefaction went on much more slowly in the sand, and much more rapidly in the mould than in the others, at least until the period when a certain amount of cadaveric fat was formed. After this, putrefaction proceeded the most rapidly in those earths in which the least of this fat was found, as in that from the Bicêtre, while in the mould and garden soil, in which more of the fat was formed, it was slower. In the sand, where no saponification took place, the putrefaction was still less rapid, which is to be attributed to the circumstance of this earth possessing in a very high degree the property of retarding decomposition. The vegetable soils appear to be those which favour most the production of cadaveric fat. The transformation into fat appears to commence in the skin and the cellular tissue beneath, and proceeds subsequently to the muscles. The process of putrefaction, however rapid it may have been before a considerable portion of the skin has been converted into fat, then stops, or at least does not proceed in the same

manner, the subjacent tissues in place of becoming softer and disappearing are converted into fat, and finally into a grayish white and dry mass in which their structure can no longer be recognized. Cadaveric fat, M. Orfila conceives never to be formed but in those parts of the body in which there exists fat and an azotic matter. The animal fat furnishes the margaric and oleitic acids, and the azotic matter ammonia. In regard to the circumstances which favour the formation of cadaveric fat in bodies buried in the earth, M. Orfila has found that nearly three years is necessary for the conversion of the whole body into fat, but in water, under the same circumstances, the transformation takes place much more quickly. The complete change into fat of bodies interred in separate graves is very rare; under such circumstances only certain parts of the corpse undergo saponification, and often even in these the change is imperfect. It is the bodies accumulated in common graves in which complete saponification occurs; among them those which are situated at the lowest part of the grave appear to be the first which are transformed into soap. The particular nature of the soil in which the body is interred has a powerful influence in promoting or retarding saponification—a considerable thickness of earth above the body appears to be essential to its conversion into soap. Those bodies which are loaded with fat, and at the same time strong and robust, with solid and compact tissues, are those in which saponification takes place the most readily; bodies that are very dry and meagre more commonly are converted into mummies. Saponification occurs more quickly in young than in adult or aged subjects. M. Orfila adds that he has frequently found the soap produced during the putrefaction of bodies interred, in place of being composed of the acids of fat and ammonia, to be almost entirely calcareous; in other words the ammonia has been replaced by lime. In these cases M. Orfila conceives that the rain water in filtering through the earth before it arrives in the coffin, dissolves certain calcareous salts, by which the ammoniacal soap into which the corpse becomes transformed is decomposed and changed into a stearate of lime.

We must here close our analysis of this highly interesting work. The foregoing presents a very full analysis of the first volume, and the space which we have appropriated to it will

not, we trust, be considered as unprofitably occupied. The individual who is called upon to examine a body that has for some time been interred, with the view of determining whether death has been the result of disease or produced by violence, is incapable of performing the important task entrusted to him in a manner calculable to subserve the ends of justice, if he be not intimately acquainted with the ordinary changes which the various tissues of a corpse undergo subsequently to its being buried.

In the remaining part of the work, M. Orfila examines the phenomena presented during the putrefaction of bodies immersed in water, in the contents of a privy, and in a dunghill; the comparative progress of putrefaction in these different situations; the changes induced in our tissues by putrefaction which may be confounded with pathological lesions; and he considers finally, the application of all the preceding facts to questions of juridical medicine. On some future occasion we may be tempted to take up the second volume, for the purpose of laying before our readers an analysis of its important contents.

ART. III.—IRRITATION OF THE SPINAL MARROW.

A Treatise on Neuralgic Diseases, dependent upon Irritation of the Spinal Marrow and Ganglia of the Sympathetic Nerve. By Thomas Pridgin Teale, Member of the Royal College of Surgeons in London, of the Royal Medical Society of Edinburgh, Senior Surgeon to the Leeds Public Dispensary, &c. London, 1829. *pp.* 120.

Observations on the Disorders of Females, connected with Uterine Irritation. By Thomas Addison, *M. D., Assistant Physician to Guy's Hospital, &c. &c.* 8*vo.* 1830.

An analysis of the first of the works whose titles we here prefix, can no more be an adequate substitute for a perusal of it, than for that of the best essays of Abernethy—every word of it should

be read. In presenting this notice of it to our readers, we hope to refresh the minds of those who have perused it, and to induce others to procure it and give it a place in their libraries, among works of the greatest practical importance. After wandering for days through the mazy and barren pages of a McCulloch and other writers of a similar stamp, and seldom coming in sight of an idea worth treasuring up, it is truly cheering to alight on a work so refreshing as the one before us.

Without attempting either a critique or an analysis of this treatise, we shall present an abstract of it, as nearly as possible in the author's own words.

"The difficulty and embarrassment, which have attended the diagnosis and treatment of neuralgic affections, he thinks, have arisen from mistaken views of their pathology. They have too often been regarded as actual diseases of those nervous filaments, which are the immediate seat of neuralgia, instead of being considered as symptomatic of disease in the larger nervous masses, from which those nerves are derived; hence the treatment has too frequently been ineffectually applied to the *seat of neuralgia*, instead of being directed to the more remote and less obvious *seat of disease*."

It is now pretty generally admitted as a pathologial axiom, that disease of the larger nervous masses, as the brain and spinal marrow, is not so much evinced by phenomena in the immediate seat of disease, as in those remote parts, to which the nerves arising from the diseased portion are distributed. And the author thinks a well grounded analogy will justify us in regarding the nervous masses of the ganglionic system, as bearing the same relation to the nerves derived from them, as the larger nervous masses of the cerebro-spinal system bear to their respective nerves. Hence many nervous affections of the viscera ought not to be considered as diseases of the viscera themselves, but as symptomatic of disease in those particular ganglia, whence their nerves are derived. (p. 4.)

Influenced by these considerations, says Mr. Teale, I have for a few years been in the habit of treating many of these nervous affections, as *diseases of some portion of the spinal marrow or ganglia;* and have been still further confirmed in my opinion, by the frequent and *almost uniform co-existence of tenderness* on pressing some portion of the vertebral column, and the circumstance of *the tender portion of the spine being in the particular situation where the nerves of the affected part originate.*

After announcing thus, in general terms, his own views, the author devotes several pages to adducing the testimony of other late writers, in corroboration of them; and in doing this he evinces a sense of justice and candor, which is not universal at the present day.* He then proceeds to describe various morbid phenomena exhibited by the spinal nerves, under the head of *Irritation of the Spinal Marrow*; and several affections of the organs which derive their nerves from the sympathetic system, under *Irritation of the ganglia of the sympathetic.*

Irritation of the Spinal Marrow.

The symptoms of this affection consist in an infinite variety of morbid functions of the nerves of sensation and volition, which have their origin in the spinal marrow; and the parts in which these morbid functions are exhibited, of course, says Mr. T. have reference to the distribution of the spinal nerves.

In this complaint, *tenderness* in the portion of the vertebral column, which corresponds to the origin of the affected nerves, is generally in a striking and unequivocal manner evinced by pressure. In some instances the tenderness is so great, that even slight pressure can scarcely be borne, and will often cause pain to strike from the spine to the seat of spasm or neuralgia. This affection of the spinal marrow occasionally exists throughout the whole extent; more frequently, however, it is confined to some particular portion, and occasionally is seated in different and remote portions at the same time; the particular symptoms, and the tenderness on pressure, indicating the affected part.

When the *upper cervical portion* of the spinal marrow is diseased, we frequently find neuralgic affections of the scalp; the pain strikes in various directions over the posterior and lateral parts of the head; sometimes the twigs in the neighbourhood of the ear, sometimes those which ascend over the occiput to the superior part of the scalp, are more particularly the seat

* The papers which he notices are the following:

1st. R. P. Player *on irritation of the spinal nerves,* published in the Quarterly Journal of Science in 1821.

2nd. Essay on *irritation of the spinal nerves,* by Thomas Brown, M. D. Glasgow Med. Jour. May 1828.

3rd. Observations upon some forms of *spinal and cerebral irritation.* By John Darwall, M. D. Midland Med. and Surg. Reporter, May 1829.

of the complaint; the nervous twigs distributed to the integuments of the neck, are occasionally affected, the pain darting across the neck to the edge of the lower jaw, and sometimes encroaching a little upon the face. These neuralgic diseases frequently assume an intermittent form, the paroxysms generally occurring in the evening. A stiff neck, or impaired action of the muscles moving the head, frequently attends the affection of the upper cervical portion of the spinal marrow; and occasionally the voice is completely lost, or suffers alteration, and the act of speaking is attended with pain or difficulty.

Irritation of the *lower cervical portion* of the spinal marrow gives rise to a morbid state of the nerves of the upper extremities, shoulders, and integuments at the upper part of the thorax. Pain is felt in various parts of the arm, shoulder and breast; sometimes the pain takes the course of the anterior thoracic branches of the brachial plexus, while occasionally it is fixed at some point near the clavicle, scapula or shoulder-joint, at the insertion of the deltoid, or near the elbow, or shoots along the course of some of the cutaneous nerves. Frequently one or both of the mammæ become exquisitely sensible and painful on pressure, and some degree of swelling occasionally takes place in the breast, attended with a knotty irregular feel, when the neuralgic pains have existed a considerable time in that part. Prickling and numbness, tingling and creeping sensations, are often felt in the upper extremities; and also a sensation of cold water trickling over the surface. On rubbing the hand over the part affected, a soreness is frequently felt, which is described as not merely situated in the integuments, but also in the more deep seated parts. In the muscular system are observed most frequently a weakness of the upper extremities, sometimes referred particularly to the wrists, tremors and unsteadiness of the hands; also cramps and spasms of various degrees of intensity. Occasionally there is an inability to perform complete extension of the elbows, the arm appearing restrained by the tendon of the biceps; pain and tightness being produced in this part, when extension is attempted beyond a certain point. As far as I have observed, says Mr. Teale, the pains and other morbid feelings in the upper extremities and chest, are felt more frequently and more severely on the left than on the right side.

Females of sedentary habits appear particularly subject to these affections of the upper extremities, and it is not uncommon for them to complain of being scarcely able to feel the needle when it is held in their fingers, and of their needle or their work frequently dropping from their hands.

When the *upper dorsal portion* is affected, in addition to various morbid sensations, similar to those in the extremities, there is often a fixed pain in some part of the intercostal muscles, to which the name of pleurodynia has been assigned; and when this pain has existed a long time, there is tenderness on pressing the part.

When the *lower dorsal half* of the spinal marrow is the seat of the irritation, or subacute inflammation, the pleurodynia, when it exists, is felt in the lower intercostal muscles; frequently there is also a sensation of a cord tied round the waist; an oppressive sense of tightness across the epigastrium and lower sternal region; and soreness along the cartilages of the lower ribs, or in the course of the insertion of the diaphragm. Various pains, fixed and fugitive, are also felt in the parietes of the abdomen, throughout any part of the abdominal and lumbar muscles; the pain is frequently fixed in some portion of the rectus muscle, and not unfrequently in the oblique muscles or transversalis, a little above the crest of the ilium, particularly when the origin of two or three of the lowest dorsal nerves is diseased.

The affection of *the lumbar and sacral portion* of the spinal cord, often produces a sensation of soreness in the scrotum and neighbouring integuments, and the lower extremities become the seat of various morbid sensations, spasms, tremors, &c., for the most part resembling those which have been described as occurring in the upper limbs. The patients also complain of a sense of insecurity or instability in walking; their knees totter, and feel scarcely able to support the weight of the body.

That irritated or morbid condition of the spinal marrow, which occasions the symptoms just detailed, is not necessarily connected with any deformity of the spine or disease of the vertebræ. It may co-exist with these, as well as with any other diseases, but it so frequently occurs without them, that they cannot be regarded as dependent on each other.

Symptoms of affection of the brain frequently occur in conjunction with these diseases of the spinal marrow. These, however, must be regarded as the result of extension of disease from one part to another, most probably through the medium of the membranes. (13–19.)

Treatment.—When the neuralgic affection can be traced to some portion of the spinal marrow, the *principal remedies* are, local depletion by leeches or cupping, and counter irritation by blisters to the affected portion of the spine; attention to the regular functions of the bowels, and to diet. A repetition of the local depletion and blistering is often necessary, and sometimes at intervals for a considerable length of time. In a few very obstinate cases issues or setons have been thought necessary; and where the disease has been very unyielding, a mild mercurial course has appeared beneficial. Recumbency, during the treatment, is by no means essential, unless there be actual disease of the vertebræ. When there is a tendency to relapse, Mr. T. recommends a liniment to be applied to the spine, consisting of one part of *spt. tereb.* and two of *ol. oliv.* The preceding detail of symptoms and treatment is illustrated by nine cases. (20.)

Irritation of the Ganglia of the Sympathetic Nerve.

The ganglia of the sympathetic nerve appear subject to a state of disease, similar to that which has just been described, as occurring in the spinal marrow.

As the disease may be confined to one part of the spinal marrow, or may exist simultaneously in different portions, or may even pervade the whole extent, so the affection of the ganglia may be confined to one of these nervous masses, may exist in several, which are contiguous, or in ganglia, which are remote from each other; and, as there is reason to believe, the whole chain may occasionally be affected.

The disease of the ganglia is seldom found, says Mr. T., except in conjunction with that of the corresponding portion of the spinal marrow, whereas the spinal marrow is often affected without the neighbouring ganglia being under the influence of disease. Thus we frequently find symptoms of disease in a portion of the spinal marrow without any evidence of its existence in the corresponding ganglia; frequently the symptoms

of both combined, and occasionally, but rarely, symptoms referable to the ganglia, without the spinal marrow being implicated.

The principal symptoms resulting from irritation of the ganglia of the sympathetic, are to be found in those organs, which derive their nerves from this source. They consist of perverted functions of these organs, and are exemplified by a variety of phenomena. The *involuntary muscles*, deriving their power from the sympathetic, have their action altered, as is evinced by spasms and irregularity in their contractions. The heart is seized with palpitations, the large vessels with inordinate pulsations; the muscular fibres connected with the bronchial apparatus, are thrown into spasm, constituting a genuine asthma independent of bronchial inflammation. The muscular fibres of the stomach and intestines become the seat of spasm, and of various other deviations from their natural operations. The *sensibility* of the organs, which derive their sentient power from the great sympathetic, is variously perverted, the nervous filaments being the seat of pains. The heart and lungs for instance, are subject to morbid sensations, bearing great analogy to those, which have been designated *tic douloureux*, when occurring in the spinal nerves. The stomach and intestines are liable to similar neuralgiæ, to which the names gastrodynia, and enterodynia have been applied. The kidneys, the bladder, and the uterus, are liable to the same perverted state of their sensibility. The secretions also undergo alterations—products being formed, which in health have no existence. This is exemplified by the enormous secretions of air, which sometimes occur in the stomach. Large quantities of clear transparent liquid are also secreted by this organ, constituting what is called pyrosis. The secretions of the stomach undergo variation in their qualities, rendering them unfit for the digestive process. It is probable that the secretion of the liver also experiences some alteration in these complaints. The urine is sometimes influenced, and I am inclined to suspect, says Mr. T., that some forms of diabetes partake of a neuralgic character. Leucorrhea is frequently a concomitant of these diseases, and ceases on their removal; but I am not prepared to say, that it is ever symptomatic of them. Ir-

regularities in the catamenia are often observed, the discharge being generally in excess. (38-40.)

In conjunction with the symptoms denoting disease of the ganglia, *tenderness* to a greater or less degree *may generally be found* on pressing some part of the spine, and the seat of tenderness is near the part occupied by the particular ganglia from which the nerves of the disordered organ are derived.

With respect to the *treatment* of irritation of the *sympathetic ganglia*, Mr. Teale says, I have little to add to what has been said respecting the treatment of irritation of the *spinal marrow*. Leeches, cupping, blisters, &c., to the neighbourhood of the affected ganglia, constitute the essential part. He mentions several internal remedies, which may be useful as adjuvants or palliatives. These, however, he thinks seldom necessary; and when alone relied upon, without any treatment being directed to the affected ganglia, often fail, even of giving temporary relief. Of still less efficacy, either temporary or permanent, are external remedies, as leeches or blisters, when applied to the region of the heart or stomach, if these organs are the seat of neuralgia. (41-2.)

Here follow two very interesting sections on neuralgia of the heart, and neuralgia of the stomach, which cannot be condensed, nor inserted here entire. He then devotes two or three pages to a point which he says it is of great importance to bear in mind; viz. that these nervous affections sometimes accompany other diseases. The next eighteen pages are devoted to the inquiry, "how far the views, which have been taken, are consistent with anatomical and physiological facts?" This inquiry becomes necessary, since the organs, which are most frequently the seat of these affections are supplied with nerves from two sources. Mr. Teale prosecutes this inquiry by investigating the following queries.

1. Is the muscular action of the heart, arteries, stomach, and intestines, dependent upon the *cerebro-spinal*, or upon the *sympathetic* system?

2. Are painful affections of the heart, lungs, stomach, and intestines, seated in the filaments of the pneumo-gastric, or of the sympathetic nerves?

3. Is the pneumo-gastric nerve the *only* agent in digestion,

or do the nerves of the sympathetic system exert any considerable influence in the digestive process? (56–73.)

After a very industrious research and comparison of the descriptions of *angina pectoris* by various writers, Mr. Teale comes to the following conclusion, viz.

"I have been induced to refer the various groups of symptoms, which have been described as *angina pectoris*, to an affection of some portion or portions of the spinal marrow, and of the corresponding ganglia of the sympathetic, by the following considerations.

1. The fact, as I have before observed, that most of the morbid phenomena exhibited in the extreme filaments of nerves, are seldom owing to disease in the nerves themselves, but to an affection of the nervous mass from which they are derived.

2. The co-existence of pain on pressing some portion of the spine with the symptoms constituting angina pectoris; and the correspondence of the painful part of the spine with the particular symptoms which are present; namely, tenderness in the lower dorsal portion of the spine in conjunction with the stomach affection, constriction, &c., and tenderness in the cervical spine, with pain in the arms, breast, and shoulders, and palpitations.

3. The relief obtained by local antiphlogistic measures to the spine; for instance, to the lower dorsal portion when the stomach is affected, and there is constriction; and to the cervical portion, when there is an affection of the arms and palpitations. (91. 108.)

In a short section on *colica pictonum*, Mr. Teale observes, that this disease appears attributable to neuralgia of several nerves, both of the spinal and sympathetic systems, in which opinion he is supported in part, if not entirely, by Andral.

In conclusion we would remark, that in the preceding pages we have not used marks of quotation, because the language is almost entirely the author's, as well as the ideas; and to any one who is extremely scrupulous with respect to authorship, we would recommend to affix such marks to the beginning and end of this review.

We now turn to Dr. Addison's interesting observations on the disorders connected with uterine irritation. This little volume formed the subject of some clinical lectures delivered to the students of Guy's Hospital, for the illustration of a very prevalent and important class of diseases which had long engaged Dr. A.'s attention. Our task must be limited to presenting a few extracts from the most important parts of the work, and linking them by some abstracts of the rest.

Dr. Addison introduces the subject by presenting to his readers a brief sketch of the doctrines of ancient and modern writers on the subject of general and local diseases. In this interesting part of his work the author shows that one party contends for the constitutional origin of local diseases; that another party with equal plausibility contends for the local origin of disorders formerly believed to be general; while finally a very numerous class of important diseases constitute at the present day, a sort of neutral ground, concerning which there appears to exist a truce among all parties. We have neither inclination nor space to follow Dr. A. in this exposition of the opinions of others on the topics in question, and proceed to state his views on the subject of uterine irritation. It is proper to state that Dr. Addison does not think it requisite to define the term irritation otherwise than by allowing that it is "in common use to signify a disturbance in the endowments or functions of a part independent of either actual inflammation or organic lesion." He allows that it may give rise to these effects, but believes that it may exist independent of either. The following description of the symptoms of the disease we offer in the language of our author.

"The most frequent symptoms of uterine irritation are, *irregular menstruation*, the discharge being preceded or accompanied by pain in the back, loins, or thighs, or in the region of the uterus itself, and attended with forcing or bearing down; the *discharge being in excess* either in point of mere quantity or in continuance, or in recurrence; *tenderness of the womb itself upon pressure* made either externally or *per vaginam*, a tenderness in some instances so great as to interfere with the privileges of matrimony; and, lastly, *leucorrhœa*. The most frequent symptoms, however, are, unquestionably, *painful menstruation* and *leucorrhœal discharge*, although the former is often the only symptom acknowledged by the patient herself. Such, Gentle-

men, are the few plain, simple indications of a state of uterus which is repeatedly overlooked, although productive of the most serious disturbance both of the general health and of particular organs; disturbance which, when once produced, stamps a character upon the general and local ailments of the sufferer, strongly indicative, to the experienced man, of uterine irritation; a character which confirms him in the belief that it is from such irritation that the evil originates, and that it is to correct the condition of the uterine system that his chief attention is to be directed." 12.

Dr. Addison remarks that the predisposing causes of uterine irritation consist in those circumstances which create morbid sensibility, such as sedentary and luxurious habits, late hours, passions, and mental emotions, &c. But the most powerful is constitutional irritability commonly called the nervous temperament.

The *exciting causes* again, are *active exertion of any kind during the flow of the menses; frequent child-bearing, especially if the patient suckle her children herself; excessive venery, and, indeed, venereal excitement of every kind.* Married women, he thinks, perhaps suffer most from child-bearing, and from imprudence during the menstrual period; unmarried women, on the other hand, from similar imprudence, and peradventure, from causes of excitement of the genital organs, concerning which it is unnecessary to be very explicit. 14.

When a female is affected with this form of disease she generally first complains of feeling nervous, and in many cases of being low spirited. On examining the pulse, the physician perceives a tremor in the hand. There is much mental agitation, with sobbing, quivering of the lips, a flow of tears, &c. this very often comes on suddenly, in young and susceptible patients, when the medical attendant attempts to soothe them.

"She tells you, that without any assignable cause, she gradually declined in health and spirits; that she has lost her wonted alacrity, has become indolent, and is easily fatigued by comparatively slight exertion; that she is readily flurried; that her heart often beats, flutters, or palpitates; that the impressions made upon her mind are altogether disproportionate to the causes producing them; that she is very prone to weep, and occasionally experiences sudden and transitory feeelings of alarm and dread especially during the night, without being able satisfactorily to account for them; in short, that both body and mind are in a morbidly sensitive condition, whilst general distress is

strikingly depicted in her pale or dejected countenance. If you proceed in your inquiries to ascertain the state of the uterus, you are perhaps informed that she is regular; but if interrogated more narrowly, it will almost uniformly be found that she suffers pain either before or during the flow, in the back or loins, and that in the intervals she is troubled with leucorrhœal discharge. To these inquiries she gives a reluctant reply, will often, perhaps from delicacy, conceal the truth, or if she acknowledge it, will probably add, 'Oh, that is of no consequence; that is not my complaint; I have long been accustomed to that, and it does me no harm;' and then winds up the case with telling you that she has taken a load of tonic medicines without benefit. If you ask her whether such questions were ever put to her before, you are generally answered in the negative. Such a case as this, with slight modifications, is of common occurrence, yet it most frequently happens, that, with the general disorder, we have decided derangement of some internal organ or organs; and of these, the organs of digestion appear to be almost uniformly the first to participate; indeed the derangement of the digestive organs, to a greater or less extent, is so commonly associated with the general affection I have described, that one cannot but conclude that the general affection is most materially influenced, if not in part produced by it. It is sufficient, however, for our purpose to know that the exalted susceptibility of the general system and this deranged condition of the first passages, are very commonly co-existent, however they may stand in the relation of cause and effect.

"The first appreciable disturbance of the stomach is most frequently a tendency to *flatulency*, which flatulency is productive of different effects in different individuals, although, in all, the stomach itself appears to be in a morbidly irritable condition, so as greatly to modify or aggravate the consequences that would otherwise arise from the presence of such flatulency. The patient experiences uneasiness at the scrobiculus cordis; she complains of a sense of load or distension after meals, or, if the stomach be uncharged with food, of prickings and anomalous pains in the organ, all of which symptoms are pretty uniformly relieved for a time by the expulsion of flatus from the stomach. In other cases, the irritation produced by the flatus about the cardiac orifice, excites a sympathetic affection in the throat, a sort of globus hystericus, which is variously described by patients, some calling it spasm, whilst others compare it to a mechanical obstruction, and indeed one lady somewhat fancifully compared it to a bullock in her throat. It is a sensation, however, which will often last, in a greater or less degree, for days, or even weeks, with little intermission.

"At other times, the patient suffers from repeated vomiting, or is perhaps seized suddenly, but only occasionally, with

vomiting, preceded, accompanied, or followed by an irregularly inverted action, chiefly of the œsophagus, and attended with an ascent of flatus; so as in some instances, to threaten suffocation." 18.

The patient is liable, while labouring under this uterine irritation, to be attacked by painful affections in particular organs or parts; and especially in the abdominal viscera. The principal of these are—

"1st. A pain seated under the left mamma, or under the margin of the ribs of the same side. 2dly. A pain under the margin of the ribs of the right side. 3dly. Pain in the course of the descending colon. 4thly. Pain in the course of the ascending colon, especially towards the right hypochondrium. 5thly. Pain affecting the abdomen generally. 6thly. Pain in the region of the stomach. And lastly, Pain in the region of the kidneys, sometimes extending down the course of the ureters to the bladder." 22.

Some doubts exist as regards the real seat of these painful affections, owing to the circumstance, that the natural functions of the organs or parts are not so necessarily disordered as to indicate in a clear manner the localization of the pain. Some of these affections are of long continuance and the source of considerable sufferings. This is particularly the case with the pain under the mamma, or under the margin of the ribs of the left side, which is much more frequently met with than that of any other part, and will often continue for weeks and even months with little intermission. On this subject our author makes the following remarks.

"This pain is very circumscribed; it is not necessarily or constantly increased by a deep inspiration or by external pressure, although this is occasionally observed; it is seldom attended with cough; it is not materially affected either by a charged or by an empty state of the stomach, but varies in its intensity, and now and then goes off altogether for a few minutes, hours, or even days, or the pain shall subside and be succeeded by a mere uneasiness or sense of fulness in the part. This, pain, as I have said, is of extremely frequent occurrence, and is very often associated with palpitation of the heart, or, what is much more usual, with unnatural pulsation of the organ, if I may be allowed the expression; *i. e.* the patient is conscious of the heart's action, or she feels as if its impulse were communicated to a part so sensitive as to excite distinct sensation, which, you know, is not the case in a state of health." 23.

Dr. A. is inclined to refer this pain to the cardiac orifice of the stomach, thus differing from Mr. Tate who attributes it to the cardiac plexus, or intercostal nerve. Dr. A. grounds his opinion on the following fact. A young woman in whom this painful affection had long prevailed to a considerable extent died suddenly in a fit. The only proof of irritation that could be detected on examination of the body, was "a series of very delicate vessels, or rather a blush of redness surrounding the cardiac orifice of the stomach, such as might be supposed to be the result of any continued irritation or spasmodic action." The author is particular in expressing his opinion that it was not inflammatory.

As regards the pain which occasionally occurs under the right rib, it is remarked, that though sometimes circumscribed, it usually extends from the scrobiculus cordis, along the margin of the ribs, as far as the loin of that side. It is occasionally increased by a full inspiration, and generally aggravated by external pressure. There is some doubt as regards the seat of this pain, Dr. A. having sometimes thought himself justified in referring it to the colon, sometimes to the duodenum. The abdomen is in some instances affected with pain, closely resembling that which is characteristic of peritonitis. The resemblance is so close, that our author has often been deceived by it. It is accompanied in some cases with a tympanitic, in others with a flaccid state of the bowels. Dr. A. remarks that the disease might be termed a neuralgia of the abdomen. The pain in the stomach is usually distressing, and well marked;—the more intense the disorder, the more positive is the evidence of its being really seated in the organ mentioned. It sometimes comes on suddenly, occasioning great agony, and manifesting an intermittent character. Some patients are affected with pain in the region of the kidneys, sometimes extending down the course of the ureters to the bladder. In some cases the bladder itself is the seat of pain. In both forms of the complaint dysuria is a general attendant.

On the subject of the diagnosis, Dr. Addison makes the following remarks:

"Whenever a female complains to you of pain under the left breast, with or without palpitation or pulsation of the heart; of pain in the right hypochondrium; in the situation of the left or

right colon; or of acute pain generally over the whole belly, or in the region of the kidneys or bladder—always be upon your guard, and if on inquiry you find a few, or many of the constitutional symptoms I have described, together with indications of uterine irritation, as shown by pain in the pelvis, in the loins, or in the thigh, before or during the catamenial flow; by too frequent or too profuse menstruation; or by leucorrhœal discharge; I say, when you find such an assemblage of symptoms and circumstances, your suspicions will amount to a high degree of probability, that the complaint is not of an inflammatory nature." 31.

We need hardly remark that all these symptoms may proceed from organic diseases of the uterus. On this account the organ should, if possible, be examined.

The indications of cure as set down by Dr. A. are, 1st, to correct the morbid condition of the uterus; 2d, to remove or mitigate the violence of troublesome symptoms in any individual case; and 3rd, to restore tone and vigour to the general constitution. He opposes the instructions usually given in respect to cupping the loins, leeching the pubes, to the administration of purgatives, anodynes, baths, &c., and gives a decided preference to local applications made to the uterus itself. Dr. A. condemns blood-letting, unless in the case of immoderate menstruation, with headache and other symptoms of vascular plethora. The following remarks on the subject of local applications will be read with interest.

"The applications to which I allude, are *cold astringent washes*, injected *per vaginam* by means of a proper syringe. The ordinary womb syringe answers the purpose exceedingly well, but one of any convenient shape may be used, provided it be sufficiently large to contain from four to six or eight ounces of fluid. The injection should be introduced with such a degree of force, as shall secure its application to the upper part of the vagina, and to the os uteri; and the operation should be repeated two, three, or four times a day, according to the circumstances of the individual case.

"Either the mineral or vegetable astringents may be used, the former however I prefer, as they do not stain the patient's linen, and consequently are not so much objected to. With respect to the precautions to be observed in the employment of these injections, very few are required beyond what common sense would dictate. Should the injection occasion smarting,

which is by no means unfrequently the case at first, it may be diluted with water, or water alone may be used till the original tenderness subsides, which for the most part it will soon do. It will also be prudent to instruct the patient to relinquish it a little before the expected period of menstruation, and to resume it as soon as that period is over. These are almost the only precautions I have ever deemed it necessary to observe. Although in very irritable habits, and especially when the stomach is liable to be affected with pain and spasm, it may be as well to direct the wash to be used tepid at first, gradually diminishing the warmth till it be brought to the ordinary temperature of the patient's apartment, which will pretty uniformly be borne exceedingly well after a time, except perhaps during a few of the coldest months in winter. The wash I most frequently employ is the *Liquor Aluminis Compositus*, of the London Pharmacopœia, that is, two drams of *alum*, and two drams of *sulphate of zinc*, to a pint of water. This practice must be persevered in for a length of time, proportionate to the obstinacy of the case and the effects it produces. Indeed, I myself recommend females never to relinquish it, but to employ it from time to time, as long as they continue to menstruate, to prevent the recurrence of the disorder, and its unhappy consequences. I have said that the patient should desist from the use of the injection, a little before and during the menstrual period, but she ought also to be specially cautioned against using any violent exertion, or undergoing any unusual fatigue at that time, as nothing so completely thwarts your purpose as imprudence committed whilst the irritable uterus is performing its functions."

This wash is to be desisted from, and the patient is directed to remain quiet in bed, whenever the disease is characterized by frequent and excessive catamenial discharge.

To allay irritation, purgatives are recommended. The article of that class which Dr. A. prefers, is castor oil, when it agrees with the stomach. In other cases compound extract of colocynth, with blue pill or calomel, and hyoscyamus are preferred. For neuralgia of the abdomen, oil of turpentine is recommended in doses of from two drachms to half an ounce, with three or four drachms of castor oil.

We pass over, from want of room, our author's valuable practical remarks on the means of removing occasional symptoms, and shall only say a few words on the mode he recommends for fulfilling the third indication—the restoration of health and vigour to the general constitution. For this purpose

tonics have been early and freely employed; but so far from proving successful, they have, in the majority of cases, given rise to very unsatisfactory results. Dr. A. attributes this to inattention on the part of the physician to the local irritation of the uterus. He remarks, however, that the sulphate of zinc may be resorted to early, provided it do not offend the stomach. The dose is a grain night and morning either alone or in combination with extract of conium or hyosciamus, the pilul. galb. compos. or extract of gentian or bark. The dose of the sulphate may be gradually increased and the diet should be carefully regulated.

We regret that our limits will not allow us to enter more into details, and force us to refer our readers, for more particular information, to the work itself, and especially to the interesting cases, with the details of which the author has closed his volume.

ART. IV.—ANATOMY OF THE GROIN.

Drawings of the Anatomy of the Groin; with Anatomical Remarks. By WM. DARRACH, *M. D. Philad.*, 1830. *Fol. pp.* 28.

Having been compelled, by unavoidable causes, to postpone a notice of this work which we had intended to lay before our readers in the last number of this journal, we are free to confess our great regret at the necessity of delaying for an entire quarter the introduction of a volume so creditable as this one to our American Medicine; for we do rejoice unfeignedly, at every indication of an increased spirit of enterprise, and enlarged sphere of observation among the members of the profession on this side of the Atlantic. With a population of twelve millions, with schools and colleges in every district of the country, with ample means of cultivating the sciences that relate to

medicine, the American press furnishes us with the smallest pittance of medical writings; content still, as heretofore, to do little more than republish the writings of European physicians, or venture upon a timid and desultory effort to enlighten the professional mind by notes of "Cases" or short and hasty essays, in periodical works, which, as they are rarely supported during a long series of years, so they become the early prey of an oblivion from which their contents, by their very nature evanescent, must fail to rescue them.

We hold then, in view of these circumstances, that the members of the medical body, are under obligations to those who by a more formal and orderly method, endeavour to secure to them the more permanent results of study and observation, and that they ought to look with a favourable eye upon every such endeavour; judging the merits and usefulness of the production, however, with a critical and severe judgment, the more necessary perhaps among a people where a standard yet remains to be set up, and a national medicine yet to be formed.

Though these reflections were occasioned by an examination of Dr. Darrach's work on the Groin, we would not have them understood as bespeaking the favour of the public for that gentleman's performance—far from it, we feel confident that that favour will be acceded to it upon its own merits and not upon considerations of what might be called *good civism*. The subject is too interesting to the surgeon, and the development of all the minute points connected with the operations for hernia too important, for it to fail of interesting all those concerned in those dangerous and difficult cases; we shall proceed therefore without further preface to lay before our friends some remarks on Dr. Darrach's volume.

"The original drawings of this publication were executed by M. Chasal, of Paris, from dissections made by the author, in the Pavilions de l'Ecole de Médecine during the winter of eighteen hundred and twenty." *Preface.*

The objects of the publication are to add something to pathology, and to precision in practice, to show the mechanical means employed in the human subject to connect the anterior parietes of the abdomen with the lower extremities, and to furnish some observations on points of anatomy not heretofore noticed.

The first chapter is entitled " On the Term Fascia."

Dr. D. objects that the indefinite application of the term fascia, which has heretofore designated parts differing essentially both in their structure and uses, has been productive of perplexity, and even of a dislike to the term itself, which by some has been conceived of as exhibiting rather the artificial work of the dissecting knife, than a display of structure as it is really found in rerum naturæ; but notwithstanding, there is a fascial system, which may be traced as distinctly as the serous or mucous system, and the knowledge of which is deemed by the author to be highly important.

There is a phrase in common use, the *fascia superficialis*, which furnishes us with an example of the incorrect or indeterminate application of the term, for the fascia superficialis consists only of the subcutaneous cellular tissue which lies on the abdomen and upper part of the thigh. Now, the protruded bowel in inguinal hernia, carries before it a portion of the cellular tissue which is situated under the tendon of the external oblique muscle, and when it reaches the abdominal ring, it also pushes before it a portion of cellular tissue (called fascia superficialis) situated on the outside of the same tendon. By disease, or pressure, this cellular tissue becomes compacted or thickened, and for surgical purposes receives the name of fascia.

In crural hernia, also, the tumor is very generally covered with a sac, which is exterior to that formed by the peritoneum, and which consists of the protruded and condensed cellular tissue that lies on the outside of the peritoneum, or betwixt it and the fascia transversalis—to this exterior coat the appellation of fascia propria has been given.

The phrases fascia propria and facia superficialis are to be regarded then as surgical phrases, and not as the expressions of anatomical structure.

But a very positive, and anatomical signification is attached to the terms fascia lata, iliaca, transversalis—for these are real *fibrous* membranes the essential structure of which, according to Dr. Darrach, is this, viz. they consist of parallel, inelastic, shining fibres, united by cellular tissue, and unconnected with muscularity.

In some places fascia consists of cellular membrane,

strengthened and rendered less elastic by a few of the above mentioned parallel fibres; as in the upper part of the fascia iliaca. On the back of the thigh the fascia resembles, in some measure, the sclerotica and the dura mater; these last named tissues are, however, composed of interlaced fibres, a circumstance in which they radically differ from the true fascia, whose lines although they decussate or cross each other, are never interlaced or woven—their various degrees of density and firmness depending on the number of lines and number of layers.

We shall copy the whole of the interesting paragraph entitled "Elements of fascia."

"The fascial system is then composed of two elements of opposite properties. The cellular tissue, which is the bond of union of the fibres, possesses the power of dilatation and contraction, or in other words, elasticity and contractility: whilst the shining fibre is, like tendon or ligament, destitute of these qualities. As, thefore, the one or the other of these ingredients predominates, it will modify the character of the structure, permitting it to be elastic and contractile when the fibres are few, and making it unyielding when they abound; more so in that case in which the fibres are in close contact and in several layers. A membrane is thus formed, well suited to facilitate, increase, and direct the action of muscles, protect the large arteries, veins, and nerves in the extremities, and to furnish a secure medium of attachment between the extremities and the trunk, in addition to that made by the ligaments of the joints." p. 10.

Being compelled by the necessity of economising the space allotted to this article, we must pass over without special notice, the very clear and instructive course of observations upon the fascia lata, the paragraphs on "fibres reflected from the surface," on "abrupt termination of the fibres," and "apparent irregularity of fibres," &c. &c.

In Chapter II. after giving a description of the plate, the author proceeds to treat of the adipose and cellular tissues of the integuments. The adipose tissue of the integuments exists in immediate contact with the derm in every part of the body, except the penis and scrotum, the external parts of the female organs of generation, the perineum, the axillæ, and eyelids.

It is most abundant on the nates and soles of the feet—it is found more abundantly upon the posterior than upon the an-

terior surface of the body. It consists of "an assemblage of delicate transparent cysts filled with fat; and of adventitious filaments, which traverse the cysts in various directions. They vary in form and size, being large and irregular on the abdomen, and small, spheroidal, and of a granulated appearance upon the face. Those in immediate contact with the derm are minute and uniform, while such as are situated farther from it are larger, and those that are situated still more interiorly where the adipose tissue unites with the subjacent cellular tissue lose the distinct form of independent cysts, these cysts being converted into irregular communicating cells filled with flakes of fat.

These observations may be verified, according to the author, by a long process of maceration which converts the oil into adipocere, and reduces the skin to a soft state in which it may be separated by washing.

If it be desired in any case to separate the globules of fat from the skin, it may be done by macerating it in water, whereby it becomes softened and thickened, and then subjecting it to the action of alcohol, which hardens the derm, and detaches the adipocere, leaving the portion of skin full of conical pits or depressions, and still retaining the filaments of the adipose tissue.

These filaments, when examined near the under surface of the derm, are found to be "opake whitish fibres, thread-like prolongations of the derm." Upon some parts of the body they are converted, as they dip into the tissues, into laminated cellular membrane, and in others, into inelastic shining fibres.

The author's observations upon the uses of the "filaments," are too much in extenso to admit of our quoting them at length, but we commend them to our readers as extremely well arranged and expressed, and particularly as they serve in a clear and definite way to illustrate the pathology and practice of some of the affections of the dermal tissues.

There is also a section on the laminated cellular tissue, which tissue consists "simply of transparent laminæ, which are so connected with each other as to make communicating cells of various forms and sizes." Dr. Darrach remarks, that like other parts of the body, the adipose tissue is liable to

inflammation, which in its effects will be modified by the peculiarities of structure which distinguish it.

In the sole of the foot, the back of the thigh and the nates, the peculiar phenomenon of inflammation of this tissue, may be studied with most advantage—and with a view of laying before us his own views of the nature and treatment of its inflammations, the Doctor enters into the following analysis of the vital properties of the structure.

"The *filaments* are endowed with a degree of life, analogous to that of tendon, ligament, and derm, exhibiting mechanical rather than active vital properties, and though this obscure vitality renders them less liable to irritation, yet when inflamed they readily mortify and slough."

"The fat, being only a secretion and therefore possessing no vital function, cannot, merely as a secretion, be the subject of morbid action, but it may become if retained an irritant to its enveloping cysts."

The *cysts*, unlike the two former constituents, are organized secreting membranes, consisting of arteries, veins, absorbents, and nerves; subject to change in size, and alteration in structure; and susceptible of the adhesive, serous, and more particularly the *suppurative* inflammation."

From the above, Dr. Darrach thinks that the progress and symptoms of inflammation in the adipose tissue, may be satisfactorily traced.

He regards this progress and these symptoms as depending upon, 1st, an inflamed state of the fatty cysts: 2nd, upon stricture of the inflamed parts, and 3rd, upon disorganization.

The application of an irritant to this tissue, produces an inflammation of the tissue of the cysts, leaving the *fat* and the filaments unaffected; and in this state the fat may be either absorbed or become, in consequence of an altered condition of the vitality of its containing organs, a positive irritant, whereby the inflammatory processes are augmented and propagated.

The second state spoken of by the author, is stricture,—if for example, there be a thick derm on one side, and on the other an unyielding fascia, and these two are connected by means of a great number of filaments passing from one to the other, and the tissue is rendered full and tense by the effusion

of coagulable lymph, and by enlargement of the bloodvessels of the part, there will be a dangerous stricture of the latter.

The third state is that of *disorganization;* the structure of the cysts is too delicate to admit of their sustaining the inflammatory action, for a great length of time, while under the *stricture* produced as has been above explained,—they soon mortify, while the filaments also begin to inflame and slough, and we next have an extensive abscess filled with pus and floating shreds of sloughy matter, consisting of the detached and disorganized filaments and cysts.

The author, upon the ground of the above explanations, is satisfied that after attending to the first indication, viz. to remove the local irritant, and arrest the inflammatory action by the antiphlogistic processes, the chief reliance of the practitioner will be necessarily placed upon the removal or mitigation of the stricture, by incisions into the derm of the affected part, extensive and deep in proportion to the requirements of the particular case; "all the other indications," says he, "lead to a palliating and expectant practice. This alone will remove the inflammation before it produces disorganization, abscess, and sinking of the system."

We feel compelled to pass over the plain and very sensible observations upon the distinctions and resemblance betwixt common phlegmon and anthrax, in order to notice at once the subject of phlegmonous erysipelas.

Dr. Darrach states that erysipelas phlegmonosum, is an acute inflammation of the skin, subsequently involving inflammation of the *sub-dermal portion* of the integuments.

Now the *sub-dermal portion* of the integuments, is either cellular tissue, or adipose tissue, or a combination of both sorts—and hence the author very properly calls in question the correctness of Mr. Lawrence's definition; Mr. Lawrence's definition is as follows:

"Erysipelas phlegmonosum, an acute inflammation of the skin and *cellular tissue*, with firm, general, and deep red swelling of the affected part, ending quickly in suppuration and sloughing."

"If," says Dr. D. "it be admitted that a tissue, consisting of cysts, fat, and filaments, is different from one which consists simply of laminæ disposed into communicating cells, these two tissues having also a different location and dif-

ferent uses, then the phrase *cellular tissue* in the above definition cannot anatomically embrace in its signification, both the subcutaneous adipose and the subcutaneous cellular tissues."

Dr. Darrach's phrase "*Sub-dermal portion* of the integuments," embraces every variety; for example, on the eyelids, perineum and labia, &c., it will be cellular tissue; on the posterior part of the body, the nates, the palms of the hands, and soles of the feet, it will be adipose tissue; whereas, upon the anterior surface of the body, especially the abdomen, it will be a modified union of both the cellular and adipose tissues. The author here enters at some length upon a more detailed examination of the several varieties of phlegmonous erysipelas growing out of these various subdermal structures: for these details, which are certainly to be esteemed in a high degree interesting and instructive, we refer to his work. As our own limits do not admit of our following him throughout, and especially, as the principles of his exposé have been clearly stated, there will be less difficulty in making the specific application of them, and the quotation at length, which we are just going to make, will set his views in a sufficiently clear light.

We have already noted the author's opinion upon the importance of incision in the treatment.

"Phlegmonous erysipelas calls for three modes of incision, suitable to the three above specified varieties of the disease. The first consists of numerous punctures made with a lancet into the affected part. This method originated with Dr. Dobson. He calls it his mode of abstracting blood as a substitute for leeching. The number of punctures he advises, to use nearly his own words, varies according to the extent of the disease, but is rarely under ten, and seldom exceeds fifty; the depth of each puncture also varies, according to the greater or less tumefaction of the parts: from two, to four tenths of an inch, however, he considers the proper respective depths. He repeats the punctures to the number and extent required, about twice a day, and often in bad cases, three or four times." "The author of this method makes a general application of it in all cases of erysipelas, but it is intended in these pages to limit its use to the *cellular* variety of phlegmonous erysipelas; not in order to relieve *stricture*, but to reduce *inordinate distention* by allowing a free discharge of blood and effused serum.

The second mode is that proposed by Mr. Lawrence, and consists in making one or two long and deep incisions. "The

objections," says Dr. D., "which have been made to this bold practice of Mr. Lawrence, lie only against its general application to the three above established varieties of phlegmonous erysipelas. In his twenty-second case, an incision was made along the whole breadth of each eyelid, and through the entire depth of the inflamed and swollen cellular structure. He states that the palpebræ were enormously *swollen* and *shining*, i. e. distended with serum. Now, this constitutes, as has been shown, the cellular variety of erysipelas, like that which occurs in the perineum, labia, penis and scrotum, where the adipose tissue is absent, and calls exclusively for the *early* employment of the mode of puncturing recommended by Dr. Dobson."

"The practice of long and deep incisions seems also injudicious in cases which involve a great extent of surface. But this practice of Mr. Lawrence is indispensable in the adipose variety of phlegmonous erysipelas, where the chief indication is the relief of stricture."

The author then speaks of the third mode, viz. that of Mr. Hutchinson, which consists in making several deep but short incisions into those affected parts in which the disease is most active. This mode the author regards as peculiarly adapted to the management of the "*adipous-cellular*" form of erysipelas, as the short and deep incisions fulfil the two indications,—to relieve the moderate degree of stricture and remove any deep-seated distention.

Chapters III. and IV. are occupied with descriptions of the plates, blended with surgical and anatomical remarks, which it is out of the question for us to attempt to analyse in this place. Such an analysis could not be given to any profit, without being accompanied with the plates for the purpose of immediate reference. And we shall not, therefore, attempt to do what we are convinced cannot be well done—but we shall refer all the remaining parts of the book on which we have just touched as upon the threshold, to our readers, with the single remark that it contains a great deal of sound practical sense in a small space.

Of the plates themselves, we can speak only in terms of commendation; indeed, the fact that they were executed under the eye of the anatomist, from dissections made by himself, affords prima facie evidence of their correctness and clearness.

ART. V.—HOSPITAL REPORTS.

The Dublin Hospital Reports and Communications in Medicine and Surgery. Vol. 5th. Dublin, 1830.

We have great pleasure in calling the attention of our readers to another volume of the highly valuable work, the name of which is at the head of this article. By giving an abstract of its contents, we shall enable them to form a just estimate of its merits, and shall at the same time be performing our duty as chroniclers of passing events in medicine. The quarterly sketch of the condition of our science and profession which it is our office to present, and our ambition to render as complete as possible, would be imperfect without the introduction of the new facts recorded in the Dublin Hospital Reports. In order that these facts, with the most interesting of the accompanying remarks, may be compressed within the limits of a review, it is necessary that we should forego the privilege of comment or criticism, and confine ourselves to the more humble but not less useful task of analysis.

The work is divided into two parts, the first of which consists of clinical reports of cases which occurred in the Meath Hospital, during the years 1828 and 1829, by Drs. Graves and Stokes; the second, which is the most extensive, embraces miscellaneous communications from various sources on medical and surgical diseases. We commence with the reports.

Arteritis. The volume opens with a highly interesting case of *arteritis.* The patient, a robust middle aged man, was first affected with alternate sensations of cold and heat in the toes of the right foot; and these sensations soon extended to the leg, attended with formication and diminished power. Pain afterwards came on in the limb, which, in the course of a month, became cold and totally destitute of sensation from the middle of the thigh downward. At this period he was admitted into the hospital. His intellect was perfect, the pulse 96 in the minute, small and soft. The temperature of the affected limb was 58°, that of the other parts of the body natural. The femoral artery felt like a hard cord, was painful on pressure, and did not pulsate. By means of the stethoscope it was ascertained that pulsation was also wanting in the external and common iliacs of

the affected side. "The latter observation," say the authors, "which we believe to be the first of the kind, was made with great ease and certainty. Having traced the pulsation of the aorta with the stethoscope, we followed the course of the vessel to the umbilical region, where the pulsation could be distinctly heard passing to the left side in the direction of the common iliac. This, however, was altogether wanting in the course of the right common iliac." It was concluded that the right common and external iliacs, and the femoral artery, were in a state of permanent obstruction. The patient died the day after his admission; but previously to his death, œdematous swelling took place in the limb, a purplish patch appeared at the ham, and the thigh became painful on pressure. Of course there was no time for advantageous treatment. Dissection revealed the following appearances. The left ventricle of the heart was in a state of active aneurism. In the innominata some red patches were observed, in which the lining membrane was thickened and softened. The ascending portion and arch of the aorta, the carotid and subclavian arteries were perfectly healthy, as was also the descending aorta to within six inches of the bifurcation, where a red slender fibrinous clot was found extending downward, beneath which the membrane was of a deep red colour, thickened, and soft. The right common iliac viewed externally was distended and livid, the left apparently healthy. On slitting down the former, it was found completely plugged up by a dark clot, and this state of things extended to the external and internal iliacs, the gluteal and obturator arteries, the femoral and profunda, and throughout the arteries of the limb as far as they could be traced. The clot in the tibial arteries was not red, and was much firmer than in the femoral and iliac arteries. The lining membrane was throughout the diseased vessels soft and thickened. In some places the clot was separated from the internal coat of the vessel by a layer of dark-coloured puriform matter, in others it was adherent. No disease was detected in the veins.

The symptoms of the case, as well as the appearances on dissection, evince that the disease commenced in the extreme branches of the arteries of the foot, and gradually extended upwards. The firmness and paleness of the clot in the lower

portions of the arteries of the limb, while in the femoral and iliac arteries it was soft and red, are sufficient evidence of this fact.

An interesting circumstance in the case was the effort of nature to supply the limb by means of anastomosing branches from the opposite side, after the access of blood through the usual channels had been completely obstructed.

The extreme coldness and utter insensibility of the limb were succeeded a little before the death of the patient by a partial restoration of warmth and sensation: and the occurrence of superficial gangrene under these circumstances, is a new evidence of the danger of a too sudden restoration of circulation to a part in which it had been suspended.

The diagnosis of this affection in its advanced stage is not difficult. The coldness of the limb, the absence or weakness of pulsation in the arteries, and the paralysis, unconnected with spinal or cerebral affection, are sufficient to indicate the nature of the complaint. In the early stages there might be greater difficulty in forming a correct judgment: but a comparison of the temperature and the arterial pulsation of both limbs, might lead to a discovery of the character of the complaint, and the timely interposition of remedies calculated to subdue the inflammation.

Aneurism of the abdominal Aorta. Two cases of aneurism of the descending aorta are detailed, which are chiefly interesting from the circumstance, that in both there was a double pulsation in the tumour perceptible to the touch, and a double sound discoverable by the stethoscope, closely resembling the sensations imparted to the hand and ear by the heart itself, and depending, as the authors suppose, upon the absolute contact of the tumour with the pericardium. In one of the cases there was the additional peculiarity, that the heart was displaced with the advance of the disease, beating first in the epigastrium after leaving its natural situation, then on the right side at the sternal end of the fifth rib, and ultimately in the intercostal space of the third and fourth ribs, where it became fixed.

As the diagnosis of aneurism of the abdominal aorta is sometimes very difficult, and "as there is as yet no general history of the disease on record," we cannot occupy a portion of our space better than by quoting from the work under re-

view an account of the symptoms by which its existence and progress are indicated.

"The first and generally most distressing symptom is pain in the back. The situation of the pain is in the lumbar region, but it may extend upwards or into either hypochondrium, and sometimes shoots down into the thighs or scrotum. It is generally constant, but has been observed to intermit completely for a considerable space of time. It is frequently extremely acute, particularly during its exacerbations, when it becomes intolerable. In other cases, however, it has been dull and fixed. It resists medical treatment remarkably, but is occasionally alleviated by leeching the loins, and the use of large doses of opium. Constipation aggravates and excites it, and in two cases it became severe during the evacuation of the urine. It is not accompanied by heat of the part, and may continue long without external tumefaction. Change of position and pressure on the loins are among its most frequent exciting causes. The patient is occasionally subject to severe fits resembling the worst form of painters' colic, and like it accompanied with spasm of the external abdominal muscles.

"In some the stomach is irritated; there is nausea, and in one case pyrosis often took place. The appetite, however, is generally good, and emaciation rarely occurs. Occasionally symptoms, indicative of obstruction of the pylorus, have been observed. Constipation is not uncommon, and at times forms so prominent a feature, as in combination with pain felt in the region of the colon, to induce the belief of stricture of the large intestine. The urine is sometimes scanty, at others unaltered in quantity or quality.

"The heart becomes engaged after the disease has continued for some time: but the symptoms are not constant, being most observable during the paroxysms of the pain. The pulse in the earlier stages of the disease is frequently natural.

"Decubitus on the back or left side often produces great distress, and brings on palpitation, which subsides on the patient resuming the posture of ease, which is often on his face, by which the pressure is taken off the diseased vessel.

"Coldness and numbness of the lower extremities are not unfrequent; and in two cases paraplegia has occurred, induced by caries of the spinal column producing spinal meningitis, or exposing the cord to pressure.

"The tumour may not become externally perceptible during the whole course of the disease. When it does point it has been almost generally at the left side, at a level with the last dorsal vertebra. As it increases it will press on the stomach, heart, or liver, and displace some of the viscera, so as to push the heart to the right side, or depress the liver into the abdominal cavity.

"The stethoscopic phenomena are those of aneurism in general, but in our case double pulsation occurred from pressure upon the heart. A *bruit de soufflet* is sometimes heard in the epigastric region.

"There is absence of fever. This is a most important sign, very remarkable in all the cases which we have heard or read of.

"Should the disease be detected in its early stage, the method of Valsalva should be diligently employed. It must, however, be remarked, that in Dr. Proudfoot's case, and particularly in that recorded by Dr. Beatty, an opposite plan appeared to give most relief. Can this be explained, by supposing, that in consequence of the use of a nutritious diet, a more coagulable blood was formed, and that thus the disease was for the time suspended."

The double pulsation of the aneurismal tumour, observed by the authors in their cases, is considered important by them, as Laënnec and Bertin have given the single pulsation as a diagnostic of all aneurisms of the aorta, including those of the ascending portion. A case of double pulsation is recorded by Cruvelhier, in his Anatomie Pathologique, but does not appear to have been thought by him an important circumstance.

As illustrative of the extreme difficulty of a correct diagnosis, in some cases of aneurism of the abdominal aorta, we are strongly tempted to give the details of a case communicated by Dr. T. E. Beatty, and recorded in the second part of the volume. The narrowness of our limits, however, precludes this gratification, and we must content ourselves with briefly touching upon some of its more prominent points.

The patient, a gentleman aged thirty-three years, was attacked with dull deeply-seated pain in the loins, which, upon any sudden change of position, became exceedingly acute. After a few weeks, it extended to his abdomen, and was attended by flatulence and tympanitic distention; but there was no increase of pain on pressure, nor was any tumour discoverable. Various plans were tried for his relief; and occasionally the symptoms so much abated as to afford reason to hope that a cure might be effected: but after an intermission of a few days or a week, they invariably returned with all their former violence. About three months after the first attack, the character of the pain underwent a change. Instead of a shock upon any sudden change of position, he now experienced "a

severe spasmodic twisting and pulling of the whole tract of the intestines," which would last to a degree of torture for some hours and then subside. There was besides an almost unceasing dull pain or uneasiness through the whole abdomen, which was aggravated by the descent of food into the bowels, and was always relieved by evacuation. The application of remedies appeared again to produce a favourable effect: but the relief was only temporary; and for several months the disease went on with occasional remissions of suffering, but with no permanent abatement. There was a constant necessity for keeping the bowels free, as the least accumulation for above five or six hours brought on pain and sometimes violent spasm. The pain occasionally changed its seat from one side to the other, and at length extended to the hip and down the thigh, and he was frequently affected with convulsive twitchings of the legs. During one year that he had now been affected, he had undergone great diversity of treatment, and received the attention of several medical men, none of whom appear to have suspected the nature of the complaint. At the end of this time by the advice of his attending physician, he went to London and afterwards to Paris, in both which places he was examined by the most eminent practitioners, with no better success. Even Andral failed in discovering the cause of his complaint, which he pronounced to be neuralgia of the bowels. During his absence, however, he became much better, and there seemed every reason to believe that a perfect recovery would be effected; but on his return to Dublin, he experienced a renewal of the disease, which, after numerous vicissitudes, often attended with intense and varied suffering, at length carried him off, about eighteen months from its commencement. Before his death the liver appeared to be much enlarged, and was distinctly felt. Upon dissection, an aneurismal tumour was found about the size of a child's head, lying upon the three last dorsal vertebræ, and communicating with the aorta anteriorly by a small round hole, situated a little above the origin of the cœliac artery. An irregular opening was observed in its upper and left part through which blood had escaped into the thorax. The liver was healthy and of the natural size; but its convex surface was deeply indented by the ribs against which it had been pressed by the tumour so as to seem enlarged. The bodies of the three

last dorsal vertebræ were deeply corded, and an opening was found leading into the spinal canal. An explanation was now afforded of the various and complicated symptoms which had marked the case. The violent intestinal pain undoubtedly originated in irritation of the solar plexus, in the neighbourhood of which the tumour was situated. The pain and spasms of the external muscles, which occurred in the latter stage of the complaint, were connected with the condition of the spine. Dr. Beatty observes, that by the employment of auscultation to the spine, they might probably have been led to a discovery of the nature of the complaint: but the situation of the tumour precluded the possibility of correct diagnosis by any of the ordinary means, as is evinced by the failure of the most skilful practitioners after a very close and minute examination.

Aneurism of the left Subclavian Artery, and of the right Carotid, successfully treated by ligature.

Having neglected the regular order of the reports in the account of the last case, we shall take the same liberty with another communication upon the subject of aneurism, in order that we may present in one view all that we can afford to extract from the volume in relation to this complaint. In the communication alluded to, the details are given of two cases of aneurism, one of the left subclavian artery, the other of the right carotid, successfully treated by means of ligature, by William H. Porter, one of the surgeons of the Meath Hospital.

In the first case, the patient was a man forty years old, who, when admitted into the hospital, had a firm pulsating tumour below the left clavicle, at the part corresponding to the division between the pectoralis major and deltoid muscles, about half as large as a hen's egg, becoming smaller when pressed, and almost disappearing when the artery was compressed above the clavicle. Before the operation, the tumour had increased to double its original size, and had already begun to displace the clavicle. It was determined to apply a ligature to the artery in the situation usually selected, namely, after it has passed the outer edge of the anterior scalenus muscle. The integuments having been divided, and the fibres of the scalenus exposed, the remainder of the operation was conducted with the handle of the knife and the finger. The operator

was careful not to wound the external jugular, though by dividing and securing this vessel he would have gained much time. Having succeeded in laying bare the subclavian, he readily secured it by means of a single round ligature: and the pulsation in the tumour and in the radial artery, immediately ceased. No unpleasant constitutional symptom followed, and every thing went on favourably for about a month. At the end of this time, the tumour, which had diminished, began to increase in size and become painful, and notwithstanding the use of antiphlogistic measures, went on to suppuration. Having been opened by an incision, it discharged about a pint of fetid purulent matter, mixed with large clots of dark blood. Under the use of pressure it soon healed, and the patient recovered completely without a single alarming symptom.

The second case was that of a female, aged 40, affected with an enormous aneurism of the right carotid, measuring 7¼ inches in length, and 6 in breadth, and extending to within one inch of the clavicle. There was reason to believe that the internal carotid was the seat of the disease. In the operation, the artery was tied at the distance of about three eighths of an inch from its origin from the arteria innominata. A single round ligature was applied as in the former case. In this instance, the local disease and constitutional disturbance which followed the operation were alarming. The temperature of the right side of the face and of the right hand were sensibly diminished; and the patient complained of numbness of these parts: but the circulation was soon restored; and at the same time pulsation in the tumour was very perceptible. This in a short time became inflamed and painful, and increased enormously in size; much general fever, with a very frequent pulse, nausea, vomiting, and great anxiety supervened, and the patient's life was in imminent danger. But by the use of venesection, leeching, cold applications to the tumour, with attention to the state of the bowels, the symptoms became milder, and in thirty days from the operation she was so well as to be allowed to walk about the ward of the hospital: but the tumour, though much diminished and no longer pulsating, was still as large as three fourths of the largest sized orange, and the patient was very much troubled with a short dry cough. In this state she remained with little alteration for about three months, when the tumour again began to inflame, fe-

brile symptoms made their appearance; and she was once more in the greatest danger. The same remedies were not on this occasion successful in arresting the inflammation, which terminated in suppuration; and the tumour at length burst, discharging much purulent matter. The debility now became extreme: but the abscess, though very tedious in its progress, ultimately healed, and the constitution struggled through without permanent injury. In the progress of the cure a spicula of bone was discharged from the opening; but its source was not known. About seven months from the time of the operation the tumour had entirely disappeared, the ulceration had healed, and the patient was discharged from the hospital perfectly recovered.

Phlebitis—Painful swellings of the lower extremities—Phlegmasia Dolens. We return to the reports of Drs. Graves and Stokes. Two cases are recorded of painful swellings of the lower extremities accompanied with inflammation of the veins, occurring the one in a man during an attack of fever, the other in a female upon the commencement of convalescence from the same complaint. The limb in each case was much swollen and extremely painful; and the tenderness, every where great, was excessive along the course of the saphena vein, which in its whole extent could be felt like a hard cord. In the instance of the male, the attendant constitutional irritation assumed the intermittent form, and, as he concealed the local affection, was at first treated with sulphate of quinia, with an aggravation of the symptoms. The application of leeches with the use of calomel and opium effected a speedy cure. No increase of temperature in the limb was observed during the continuance of the inflammation. In the female the limb was hotter than natural, and tense, but not at all red. Leeching, opium and calomel, and the hip bath gave speedy relief: but the inflammation returned several times, affecting different parts of the limb, being on one occasion most severe in the calf, on another in the instep, and on a third at the middle of the thigh; and after its subsidence in this limb, it was transferred to the other, producing a similar train of symptoms, but without the tenderness and hardness of the saphena vein. When leeches were applied during the greatest swelling, a large quantity of serous fluid flowed from their bites, before any red blood made its appearance. In the latter period of the disease, the patient became so

feeble as to require the use of stimulating and tonic remedies. She ultimately recovered.

"An accurate observation," say the authors, "of numerous cases both of phlegmasia dolens occurring after delivery, and of painful swellings of the extremities appearing during and after fever, has satisfied us of the pathological identity of the two diseases. In both, œdema occurs unattended by redness, but accompanied by increase of heat, with great tenderness and pain, and followed for a considerable time by impaired motion of the limb." In both diseases the swelling may extend over the whole extremity or may affect particular parts. In some cases the authors have observed the affection to be attended by a hard and painful state of the saphena vein: but this was generally subsequent to the disease in other parts of the limb; and in the majority of instances does not occur. They do not therefore consider the complaint as consisting primarily in inflammation of the large venous trunks. The subcutaneous cellular tissue appears to them to be the part first affected. The absence of redness is accounted for by the circumstance that the skin remains uninflamed. The degree of inflammation is intermediate between that which occasions serous effusion, and that which eventuates in the secretion of pus. The effused fluid approaches in its character to coagulable lymph, and hence the hardness and consolidation of parts which attend the complaint, when at its height.

Local depletion and the use of stupes, with the liberal employment of narcotics in the advanced stages, have been most effectual in subduing the disease in its acute form. Bandaging, tonics and diuretics should be added to the other means in the more obstinate cases; and when the knee is attacked, frequent leeching, blistering, and the use of the inclined plane are most effectual. The utility of salivation appears questionable to the authors.

After the above statements, another case is recorded which seems to have shaken in some measure their former opinion. The complaint occurred in a young man of strong habit of body. It began with pain in the thigh, which in the course of two days, became somewhat swollen, tender and elastic, but not at all red. At the same time, however, he was affected with pain in his left hypochondrium, and extensive bronchial and pneumonic inflam-

mation supervened, with symptoms of typhous fever. The patient died, and upon dissection evidences were found of inflammation in the bronchial mucous membrane, the pleura, the substance of the lungs, the spleen, and in the external iliac vein just above Poupart's ligament, where a large concretion was found nearly plugging up the vessel, and extending into some of the minute collateral branches. The lining membrane was red, and in one part adhered to the coagulum. The femoral and popliteal veins were healthy. "It cannot be denied," say the authors, "that this case is strongly corroborative of the opinion before entertained and lately insisted on by Tommasini that the phlegmasia alba dolens is in reality owing to phlebitis." We cannot see the case in the same light. In such a complication of disease, it might readily happen that the cellular membrane of a part of the thigh should partake in the prevalent inflammation, independently of disease existing in the external iliac vein.

Pneumonia—Large doses of tartar emetic, &c. &c.—The authors are advocates for the use of large doses of tartar emetic in the treatment of simple pneumonia. This remedy is especially applicable in the early stages, and in cases occurring in individuals of strong constitutions, and unattended with gastric symptoms. They administer six grains in divided doses, during the first day, and increase the quantity by two or three grains daily, till the quantity amounts to fifteen grains in the twenty-four hours. They have seldom observed abdominal irritation to follow the exhibition of the remedy. "The first dose makes the patient vomit freely, but after a few more doses the medicine is borne well. But in the greatest number of cases a state of slight nausea, without vomiting, is kept up and continues for several days, and indeed as long as the remedy is administered." Sometimes purging is produced, but it soon subsides. Diaphoresis is rare, and cases have often occurred in which from ten to twelve grains were given daily, without vomiting, purging, or sweating. They are generally able to omit the remedy, or to begin to diminish it in four or five days; but seldom omit it suddenly, "as more than once a severe relapse has followed this practice." After the disease has past its first stage, the remedy loses much of its efficacy. The cases in which they have found it necessary to continue the treatment longest, are those in which the pneumonia has supervened on

a chronic catarrh. "In one case of this kind in which the pneumonia was double, one hundred and eighty grains were administered, at the rate of twelve grains daily. In this case, the tolerance of the remedy was completely established after the second or third day." The authors, however, do not exclude general and local bleeding from their treatment; but on the contrary, regard them as of primary importance, while the tartar emetic is a very useful adjunct. When symptoms of gastric or intestinal disease exist, the use of the antimonial requires more caution. In one case which they record, the abdominal symptoms resulting from it were so violent as to render bloodletting necessary for their relief. In cases where from the commencement, symptoms of gastro-enteritis and pneumonia coexist, they withhold the tartar emetic, as they have found that its exhibition under these circumstances is always improper. "In the few cases," they observe, "which have resisted the remedy, we have found *disease of the alimentary canal, particularly ulceration of the small intestines.*"

We have given an abstract of the practice of Drs. Graves and Stokes, without interposing our own views. We cannot, however, avoid the expression of an opinion that this treatment is hazardous. It is true that by far the greater number of patients recover: but, on this side of the Atlantic, we have been accustomed to see almost all, if not all our cases of simple pneumonia, in good constitutions and early treated, yield to vigorous general and local depletion, with the use of blisters, with very moderate doses of tartar emetic, or even without this latter remedy; and the employment of these gigantic doses cannot therefore be necessary. That they are occasionally injurious appears from the admission of the authors; and when we consider how violent a pustular eruption the solution of tartar emetic is capable of producing on the skin, we are strongly impressed with the belief that *some of the ulcerations of the small intestines discovered by dissection* in cases which had resisted the remedy, were, in fact, produced by it.

Our own experience agrees with that of the authors, as to the cases of pneumonia in which calomel and opium may be most advantageously administered. "In cases where a complication with abdominal disease decidedly exists, when the fever is low, and the powers of life greatly sunk, we have found

the active administration of calomel and opium, so as to affect the gums decidedly, followed by the decoction of polygala and other stimulants, to have succeeded in the most remarkable manner."

In many cases of pneumonia, with great dyspnœa and lividity of countenance, the authors have known great improvement in the symptoms to follow the use of tartar emetic and bleeding, without any diminution of the stethoscopic signs of disease in the part of the lung chiefly concerned. They ascribe the phenomenon to the co-existence of general bronchitis and partial pneumonia, the former of which is relieved, while the latter continues, still involving the patient in danger.

They have met with one instance, in which the bronchial mucous membrane was proved by dissection to be entirely free from inflammation, in the midst of a mass of hepatized lung. This is contrary to the statement of Laënnec that in all cases of pneumonia, that portion of the membrane which exists in the affected part partakes of the inflammation.

We quote the following passage as practically important. "The *chloride of lime* has been administered by us in a case of pectoral disease, with great fetor of breath and expectoration, with remarkable benefit. The patient, in a fit of intoxication, lay naked on a stone floor for the whole of a night, and next morning had a severe pain in the side on which he lay, followed by other symptoms of an inflammatory affection of the lungs. After some time he was admitted into our wards in a state of extreme debility, with hectic fever, cough, fetid expectoration, fetor of the breath, and hippocratic countenance. A pill, containing three grains of the chloride of lime and one of opium, was administered three times a day, and in the course of three days the quantity was increased to twelve grains daily. A small quantity of wine was also allowed. The most rapid and marked amendment followed this treatment; in a few days the fetor of breath and expectoration had disappeared. No inconvenience whatever was experienced from the remedy. We also directed the covering of the bed to be sprinkled with a solution of the salt. The remedy was then omitted. In two days the fetor returned, and fever began to appear; but these symptoms again subsided with rapidity on our resuming the employment of the remedy."

In relation to percussion the authors state that they have confirmed an observation already made by others, that the patient experienced much more pain from it on one side than on the other, and the tenderness was frequently so great in certain portions of the chest, as to render the use of percussion, as a means of diagnosis, quite impossible. The cases in which this tenderness was observed were those of acute pleuritis, and pulmonary consumption, especially the latter.

Difficulty of swallowing from a Tumour in the posterior mediastinum.—A female patient was admitted into the Hospital afflicted with frequent cough, considerable dyspnœa, and great difficulty of swallowing, which she believed to be owing to a lump in her throat, referred by her to the lowest portion of her neck anteriorly. The countenance was livid and expressive of distress, and the pulse was small and accelerated. She died very soon after admission; and on examination, a large encephaloid tumour was discovered immediately below the left clavicle, displacing the lungs, in contact with the trachea, and pressing upon the œsophagus. In fact, the trachea and œsophagus were enveloped by the mass from the lower portion of the neck downwards. The tumour appeared to have originated in the posterior mediastinum which it filled, and extended into the upper portion of the left thoracic cavity. The inference drawn from stethoscopic examination had been, that the superior portion of the left lung was in a state of solidity, probably from the presence of tubercles.

Laryngitis.—As inflammation of the larynx is often attended with a material alteration in the sound produced by breathing, it not unfrequently places great difficulty in the way of deciding upon the exact state of the lungs. The authors think that this circumstance has not been sufficiently dwelt on. "In point of fact," they say, "whenever the disease in the larynx is sufficient to cause sibilous breathing, all the stethoscopic phenomena depending on the characters of the respiration are singularly modified. Thus, when the obstruction is so great as to cause the respiration to be long and painful, the expansion of the air cells is often quite inaudible." In one instance, in which the obstruction to respiration was so great, as to require tracheotomy, the respiratory murmur, before the operation, was so exceedingly feeble, as closely to resemble the impression

produced upon the ear in emphysema of the lungs: but when "a free opening had been made in the trachea, the respiratory murmur became at once puerile, and did not subside to the natural intensity for some hours." A knowledge of this fact is of practical importance, as tubercles of the lungs often accompany chronic laryngitis, and the treatment demanded in this case differs materially from that which is proper in simple disease of the larynx. Thus mercury is one of the most efficacious remedies in laryngitis; but is inapplicable to the complicated cases.

In simple chronic laryngitis, in persons of good constitution, the chief and most obvious symptom is hoarseness increased by exertion of the voice. The disease should not be neglected, as there is always danger of its passing into a worse form. The treatment recommended by the authors consists in enjoining *silence*, in the frequent application of a few leeches to the region of the larynx, and in the exhibition of mercury so as to affect the gums slightly. Tartar emetic ointment they prefer as a counter-irritant to blisters. To prevent a recurrence of the disease, they advise the habitual washing of the throat night and morning.

In this complaint the fauces and pharynx should always be examined. The authors have often found numerous small superficial excoriations bounded by red lines, and of a greyish colour, occupying the upper portion of the pharynx, and believe that the same disease extends to the laryngeal membrane to which it has been propagated from above. This state of things is observed even when no soreness of the fauces is complained of. The repeated application of a strong solution of nitrate of silver—10 grains to the ounce—by means of a camel's-hair pencil to the parts within reach, proves very serviceable: and after a slight alterative course of mercury, the use of sarsaparilla, and the general tonic plan of treatment are recommended.

In persons who have used large quantities of mercury for the cure of syphilis, this disease is much more obstinate, and is very apt to terminate in ulceration of the cartilages. "A nutritive diet, a seton in the neighbourhood of the affected part, the decoction of sarsaparilla, with the cautious use of corrosive sublimate or arsenic, the application of nitrate of silver to the pharynx and rima glottidis, by means of lint moistened in the

solution already mentioned, and mercurial inhalations have in some cases succeeded in removing the disease. Though the inflammation may have subsisted for a considerable time, the occasional application of leeches should not be neglected."

"When a decided phthisical tendency accompanies chronic laryngitis, the case is generally hopeless."

In addition to the remedies above enumerated, the application of belladonna plaster, or of a cerate made with scotch snuff as recommended by the late Dr. Godman, has been found useful by the authors during the spasmodic exacerbations. In a violent case which fell under our own observation, we found tobacco leaves steeped in hot water and applied round the throat a most efficient remedy. Pediluvium, and the exhibition of an antispasmodic draught, consisting of the ammoniated tincture of valerian, ether, and opium, are stated to have produced speedy relief in many cases of spasm, producing terrible difficulty of breathing. In some instances in which the attacks were so violent as apparently to call for instant operation, the breathing was relieved by this draught immediately after it was taken.

Diseases of the Liver. Under this head several cases of abscess of the liver are reported, in relation to which we shall select the most interesting facts and observations without entering into details.

Distended gall bladder in some instances so closely resembles hepatic abscess, as to have been mistaken for it by the most skilful surgeons, who have been surprised at finding bile instead of pus follow an incision. This mistake the authors believe has been fatal in every case except in one which occurred to themselves. A circumscribed tumour, evidently containing fluid, made its appearance in a case of chronic hepatitis, to the right of the median line of the epigastrium, in the vicinity of an incision which had been previously made over a tumefied portion of the hypochondrium. From the wound, a lancet was pushed into the tumour, and on its withdrawal was followed by nothing but dark coloured bile. The circumscribed tumour disappeared; but the fulness of the side remained. No peritoneal inflammation followed: and the patient was afterwards greatly relieved for a time by the discharge of the true abscess into the intestines. The disease, however, resulted fatally; and on

dissection a spot was discovered in the gall bladder corresponding exactly to the size and form of a lancet puncture. It was covered by a thin transparent membrane. The authors observe, that the escape of bile into the peritoneal cavity was probably prevented by the existence of adhesions at the point where the puncture was made.

In a case of hepatic abscess, very carefully opened by a small valvular incision, made through an ulcer resulting from a caustic issue previously applied over the abscess, violent peritonitis supervened, evidently owing to the escape of pus into the cavity of the peritoneum. The patient had been previously much exhausted by the disease of the liver. Instead of bleeding and the application of leeches, a blister was placed on the inside of the arm, and the vesicated surface sprinkled with morphia; half a grain of opium was given every second hour; and the patient was allowed porter. Under this plan of treatment the peritonitic symptoms entirely subsided in a few days. The patient ultimately died of the disease of the liver; and the previous existence of peritonitis which the symptoms had already manifested, was now demonstrated by the existence of organized adhesions between the convolutions of the intestines, and others connecting the intestines with the parietal peritoneum. No signs of recent inflammation of this membrane were observed. On the subject of this plan of treatment, we shall quote more largely under another head.

In another case of hepatic disease which resulted fatally, the gall bladder was found to contain "a perfectly transparent viscid fluid, which did not coagulate on the addition of nitric acid, or the application of heat. After the addition of corrosive sublimate, it became slightly opalescent on standing." A yellowish viscid mucus was found in the intestines.

With regard to the best mode of operating when it is deemed advisable to open an hepatic abscess, the opinion of the authors appears to be unfavourable to the method by caustic. "It is so tedious, that before it effects our object the abscess will probably have enlarged to a fatal extent; nor does it, as was supposed, insure the formation of adhesions. From our own experience," they observe, "we are disposed to consider adhesions between the parietal and hepatic peritoneum, in cases of abscess in the convexity of the liver, as of rare occurrence, a

circumstance which presents a remarkable contrast with their frequency in the thoracic cavity."

In no case where hepatic abscess formed were they "able to affect the system with mercury, although exhibited in full doses; an observation coinciding with staff surgeon Marshall's experience of suppuration of the liver, as it occurs in the East Indies."

Peritonitis from Perforation of the Intestines and escape of their contents into the peritoneal cavity.—Instances of this affection abound in the records of pathological anatomy, and must have occurred to most practitioners of extensive experience. We do not, therefore, propose to introduce into this abstract, the cases which have been detailed in the work before us, especially as they do not present in their origin or progress, any points of striking novelty or importance. Our object in noticing the subject, is to call the attention of the reader to a mode of treatment which is recommended by Drs. Graves and Stokes, and which appears to have been attended with encouraging success. We cannot do better than quote their own language.

"We are of opinion, that the principle of treatment in these desperate cases is not yet fully understood. Are they to be treated like cases of idiopathic peritonitis? This is a question of the highest practical importance. We shall examine it briefly. It appears to us that the antiphlogistic plan is not so applicable as in the simple form of this disease. In the first place, the perforation generally occurs at an advanced period of some other disease, when the constitution is less capable of supporting any loss of blood. In the second place, the disease, as we stated before, runs its course with such rapidity, that in a comparatively short space of time, it brings the patient into the last stage. Now it is at this time that the physician is most frequently called on to interfere, and as far as our observation has gone, the antiphlogistic plan only accelerates the fatal termination. We know that nature makes an attempt to cure, and the question is, how are we to prolong life, so that organization of the false membrane may take place? Is it by drawing blood after the peritonitis has come nearly to its last stage, when the powers of the nervous system are in the greatest state of depression? We apprehend not. Bleeding, in peritonitis, is useful in preventing the increase or extension of the disease: but in these cases the affection is *at once* extensive and severe. These considerations make us submit that gene-

ral, or even perhaps local bleeding, is a mistaken practice in this disease, and we are borne out by experience of cases somewhat similar, in recommending a different plan. In the first place, the antiphlogistic plan has failed in all our cases; this alone is an argument against it. Secondly, we know that certain cases of peritonitis, when the powers of life are greatly sunk, may recover under the exhibition of wine and opium, when bloodletting would be destruction. Thirdly, the exhibition of opium in large doses, has succeeded in our hands in checking peritonitis, when the powers of the system were so much depressed, as to make us avoid the antiphlogistic plan."

The authors then adduce in favour of the practice of giving wine and opium in peritonitis, arising from the causes alluded to, its success in the case of hepatic abscess before mentioned, when a portion of the contents of the abscess escaped into the peritoneal cavity—and the favourable effects which resulted from it in the following case.

A boy aged twelve, was attacked with enteritis for which he received no suitaqle attention for a week. At the expiration of this period, his symptoms presented all the characters of peritoneal inflammation, with great prostration of strength. Calomel and opium were exhibited, leeches and the warm bath applied, and on the following day, blood was taken from the arm. Under these circumstances he was admitted into the hospital. The countenance was collapsed, the extremities cold, the pulse barely perceptible, the respiration hurried, the abdomen swelled and exquisitely painful, and there was constant tenesmus. Large doses of the black drop were given every second hour, and mercurial frictions used over the belly. On the next day he was greatly improved, and in two days more "all symptoms of peritonitis had completely subsided. The belly felt natural; there was no tenderness; the pulse was good; and the patient declared himself well." The plan of treatment was "unfortunately" changed, and a gentle saline laxative was administered in place of the opium. This produced four evacuations, followed by a return of all the symptoms of abdominal inflammation, under which he speedily sunk. Dissection exhibited the intestines agglutinated together, and adherent to the parietal peritoneum; and a portion of puriform matter was observed in different parts of the cavity. "On detaching the caput coli from the peritoneum lining the right

iliac fossa, a small perforation of the gut was discovered by the escape of the contents of the intestines in a jet."

The authors also adduce in support of their practice, two cases of peritoneal inflammation which succeeded tapping in exhausted subjects, and in which, though apparently desperate, the disease was subdued by opium without the use of either the lancet or leeches. They inform us that "it is now nine years since this practice was introduced into the Meath Hospital." They conclude the subject in the following words. "We would then recommend the use of opium *in large doses* in cases of peritonitis from perforation. If the lancet is to be used, it should be only at the very outset of the disease, and even then its utility appears to us very problematical."

Carbonate of Ammonia secreted with the Urine.—The first part of the work concludes with a brief notice of the character of the urine, in a case of malignant petechial fever, as it was secreted on the twelfth day of the disease. It was high coloured, and effervesced strongly on the addition of an acid, owing as was proved to the presence of carbonate of ammonia. As little or no urea could be detected in the urine, it was inferred that the constituents of this principle were evolved in the state of carbonate of ammonia. The urine was examined immediately after it had been passed. We are not informed whether the patient had been taking carbonate of ammonia. After the crisis by sweating, which took place on the fourteenth day, the urea reappeared in the natural quantity, while the urine was acid, and deposited the lithates upon standing.

Stricture of the Rectum.—The second part of the work commences with a paper by Dr. Abraham Colles on diseases of the anus and rectum. The part of the communication which most strongly attracted our attention, was, that in which this experienced practitioner gives the result of his own observation as to the treatment of organic stricture of the rectum. He is confident that a perfect cure of the disease has not been effected by any plan of treatment hitherto employed. He considers the bougie well calculated to alleviate the sufferings of the patient, and has paid great attention to the use of this instrument; "and yet," he observes, "I must candidly declare, that hitherto

I have not been so fortunate as to have effected a permanent cure in a single instance; nor have I had the good fortune to meet with any patient whom I *knew* to have been afflicted with this disease, who had been cured by another surgeon." Local applications of different kinds, and various internal remedies which he has employed, have proved wholly ineffectual. Mercury he has pushed very far without any permanent benefit in a single instance. Arsenic, iron, and cicuta, have been found equally inefficient. "Large quantities of mucilage appear to give most relief. Blue pill, combined with a double quantity of Dover's powder, has also occasionally afforded much temporary alleviation."

Dr. Colles is unwilling to admit the existence of what has been called spasmodic stricture of the rectum. He states, that in the course of a pretty extensive practice for the last twenty years, he has not been able to discover a single case of disease corresponding with the description of the spasmodic stricture of authors. He recollects many cases in which this suspected condition of the rectum has yielded to the ordinary means for improving the state of the stomach and bowels, especially when combined with positive assurance to the patient that no such disease has existed. One of these cases he relates. A gentleman consulted him with a supposed stricture of the rectum, of two years standing. Respectable physicians had assured him of the existence of the disease. The diameter of the feces was diminished; the calls to stool more frequent; the discharges were generally mixed with blood and purulent mucus; he was losing flesh rapidly; his appetite and rest were indifferent, and his mind was miserable. Dr. Colles examined the rectum and convinced himself that there was no stricture. But he could not impart the same conviction to his patient, nor prevail on him to abstain from the use of the bougie, till the irritation of the bowels had been so far mitigated, by the use of blue pill and Dover's powder, with enemata of olive oil and lead water, as to allow the passage of a consistent stool of the natural diameter. After this he ceased to use the instrument: and mild bitters with bark, and the daily use of an injection of olive oil and ointment of nitrate of mercury, effected a cure of the complaint.

The Doctor has known two cases of fatal peritonitis induced

by the use of a bougie to dilate a supposed stricture at the upper part of the rectum or termination of the colon.

Vascular tumours of the Rectum.—Dr. Colles decidedly prefers the use of the knife to that of the ligature, for removing these tumours. The only danger from the former is hemorrhage, which can be arrested; while tetanus which may arise from the latter, cannot by any means be foreseen or guarded against. We shall transfer to our pages his description of the mode of operation employed by himself, which he considers less severe than that generally recommended.

"The tumours having been made to protrude by means of a purgative injection, I direct my assistant to pass a hook or common tenaculum through one or two of the largest, while I seize another lengthwise with a polypus forceps, then drawing the tumour a little towards the axis of the gut, with a large pair of scissars passed behind the forceps, I cut off all that portion which is engaged between the blades; I then proceed in the same manner to remove those tumours which the assistant holds transfixed with a hook. I do not think that any case will require the removal of more than three of these tumours, and not unfrequently the cure will be ensured by cutting off only two of them. When the operation is finished, the protruded parts generally retire within the sphincter: should any part remain out, it must be completely pushed in with the finger. In order to guard against the danger of hemorrhage, I take care not to prolong my incision higher on the bowel than what I conceive will, when replaced, lie within the circle of the sphincter; for if we cut the gut higher up, this part, when returned, may bleed freely from not having any surface closely opposed to it."

The complaint, however, may in most cases be rendered very mild, if not ultimately cured, without resorting to an operation. By causing the patient to inject four or five ounces of a solution of sulphate of zinc, containing two grains to the ounce, every night at bed time, and directing him to retain it during the night, Dr. C. has "known the disease so much alleviated, that patients had flattered themselves they had obtained a perfect cure."

Ulcer of the Rectum.—In the rectum, a short distance above the anus, an ulcer sometimes exists unconnected with any other disease. It is attended with an unhealthy purulent discharge, often mixed with a thin bloody fluid, and occasions much pain

on going to stool, which continues for an hour or two. On examination, the finger detects a raised and rather rough surface, which, when firmly pressed, "sinks into a small hollow cup of an ulcer, the edges of which are found in some degree hardened. The remedy for this disease is to introduce into the rectum a convex-edged scalpel, and make an incision through the entire length of the ulcer, continuing it through the sphincter, and dividing the verge of the anus. As soon as the wound gets into a state of suppuration, we should dress it and the ulcer with some stimulating ointment, introduced on a dossil of lint. The cure goes on without interruption, although it is rather tedious and slow of healing."

We are compelled to pass over some anatomical observations on the mucous membrane of the rectum by Dr. Houston, and a paper on the *placental soufflet* by Dr. Kennedy.

Onychia.—In a communication by M. Rynd on the subject of onychia, the particulars of a case are given to which we wish to call the attention of our readers. A medical gentleman was affected with inflammation of his thumb consequent upon the puncture of a pin. In three weeks a fungus appeared at the end of the thumb, under the anterior edge of the nail, and extended considerably, till nearly one half of the matrix of the nail was involved. The existence of an abscess was suspected, and an incision made into the thumb; but no matter was discovered. The operation was afterwards repeated with the same want of success. The suffering of the patient was extreme, and his health gave way under the constant sleeplessness and pain. In this condition he remained for two months, when pressure was advised with the view of promoting the absorption of the fungus. This was applied by means of compresses of sheet lead firmly bound upon the part. In the following night relief was suddenly obtained by the bursting of an abscess; and the ulcer ultimately healed.

Another similar case soon afterwards occurred, in which, taught by the experience of the first, the practitioner immediately after the appearance of the fungus, made a deep incision through it, with instant relief to the patient, and speedy disappearance of the fungous growth.

As fungus about the nail often arises from other causes, it is important to bear in mind its occasional dependence upon

abscess, so that time may not be lost in treatment calculated for a different indication.

But the chief interest of the case of which we have above given a sketch, is not connected exclusively with the affection of the thumb. About three weeks before the puncture of the pin, the patient had received, while dissecting the body of an individual who had died of diseased hip-joint, a wound in the thumb, which, however, had healed speedily and well; so that the subsequent constitutional symptoms are rather ascribable to the local disease before described. About three weeks after the appearance of the fungus the lymphatics of the forearm became inflamed; and the inflammation extended along their course to the axilla. This was relieved by leeches; and in a month afterwards an enlarged gland appeared in the axilla, which gave way to the same treatment. Not long subsequently a slight inflammation occurred in the throat, which was followed by an eruption of scarlet patches on the forehead, arms, and thighs. A peculiar eruption also appeared on the scrotum, and tumefaction arising from periostitis appeared upon the tibia. The health was seriously affected, and the suffering from the throat often very great. The fauces exhibited an erythematous redness, and sometimes an appearance of abrasion; but no deep ulceration. The patient now determined to try the effects of mercury, and took two grains of calomel daily for four days, which affected his gums, and rendered his breath offensive. It was then omitted, and never afterwards resumed. All the symptoms gradually declined; and when the case was reported, he was affected only with weakness, wandering pains in his hip joint, and some slight remains of eruption on the forehead and hand. It is stated that by no accident or possibility could he have contracted any syphilitic taint.

With regard to *onychia maligna*, the writer considers the most simple and satisfactory method of cure to be the complete extirpation by means of the knife, of the diseased matrix of the nail. The operation "consists in making a deep incision down to the bone, from three to four lines behind the posterior margin of the sore, which incision is carried round it, and then the entire surface is dissected out." We have repeatedly met with these cases in our practice; but have never found it necessary to have recourse to the knife. The use of a powder com-

posed of equal parts of sulphate of zinc, and corrosive chloride of mercury, sprinkled thickly upon the diseased surface, and then covered with a pledget of lint steeped in laudanum, a practice first introduced by Dr. Perkins of Philadelphia, and afterwards recommended by Dr. Physic, has always proved effectual, in our hands, in completely destroying the diseased surface, and converting the malignant ulcer into a healthy sore. Dupuytren is usually considered the author of the operation by the knife above alluded to: but according to Mr. Rynd, "it was performed in many of the hospitals in Dublin, years before the paper appeared in which the name of that distinguished surgeon is mentioned."

In the disease usually designated by the name of *inverted toe nail*, Mr. Rynd recommends the same operation as that for onychia maligna. The mere removal of a portion of the nail even from the root is not effectual, as the secreting membrane remains, and the offending matter is soon reproduced.

We are convinced, however, that neither of these painful operations is necessary. In the cases which have come under our own observation, we have usually been able to effect a cure by the plan of pressure, combined with rest, as recommended by Dr. Meigs, of this city, in a paper published in the second volume of the Philadelphia Journal of the Medical and Physical Sciences.

Ruptured Intestine.—Mr. Hart, in a communication upon the subject of contusions of the abdomen, after relating a case of ruptured intestine arising from external violence, endeavours to explain the fact, that this accident usually happens to the jejunum, by adducing the circumstance, that this portion of the bowels is at its commencement closely attached to the spine, and for some inches lower down is confined to the vicinity of that part by the shortness of its mesentery, thus affording a fixed point for the external force to act upon.

Such cases are usually considered as utterly hopeless; but Mr. Hart recommends a mode of practice which is certainly deserving a trial. His plan is to suspend the peristaltic action of the bowels by large doses of opium, and thus prevent, as far as possible, the escape of their contents through the rupture; while the inflammation of the peritoneum is to be moderated by bleeding, general and local, and counter irritation. Our

readers may recollect that the opiate practice is employed by Drs. Graves and Stokes, in the somewhat analogous affection of perforation of the intestines; and we are pleased to be able to adduce in this place an instance of its success, the particulars of which were communicated to Mr. Hart by these gentlemen, and published by him in confirmation of the propriety of the mode of practice which had previously occurred to him as suitable in the case under consideration.

A middle aged man was admitted into the Meath Hospital apparently in the last stage of peritonitis, which had come on suddenly after an attack of hypercatharsis, and was believed to have resulted from perforation of the intestine. The belly was swollen and so exquisitely tender that the slightest pressure made the patient scream. The countenance was hippocratic, the extremities cold, and the pulse weak and slow. The patient was tormented with constant hiccup. Leeches were applied to the belly without any apparent advantage. Opium was then directed in the dose of one grain every hour. The following day the symptoms were improved. "The patient had not experienced the slightest coma, headache, or delirium. The same plan of treatment was persevered in for ten or eleven days, the quantity of opium being gradually diminished. The patient recovered, after taking altogether one hundred and five grains of opium, without having experienced any of those effects which usually result from large doses of this narcotic."

Case of attempt at Suicide, with danger of suffocation by the falling down of the epiglottis.—Under this head, Dr. Houston communicates the particulars of a case of suicide, in which the throat was cut with a razor so as to sever the epiglottis from its attachments to the tongue and os hyoides, and leave it hanging by its pedicle to the back of the pomum adami. The carotids had escaped untouched, and the bleeding was inconsiderable; yet when first seen, about ten minutes after the accident, the patient scarcely appeared alive. The pulsations of the heart were imperceptible, no pulse could be felt at the wrist, the limbs were cold, and all feeling and consciousness lost. The symptoms were those of suffocation, and were found upon examination to be owing to the falling of the epiglottis over the rima glottidis, by which the passage of air into the lungs was prevented. When the obstruction was removed by

raising and securing the epiglottis, respiration returned, and the patient survived for a week.

Internal Strangulation of the bowels after parturition.—Among the pathological observations contributed by Dr. Houston, we find the following case. A lady who had given birth to several children without any untoward symptoms, was delivered of a healthy boy, her last child. She had suffered no inconvenience during pregnancy; but immediately after the birth of the infant was seized with severe pain in the bowels, and died in about thirty-four hours, with all the symptoms of the most acute peritonitis. On examination after death, the whole peritoneal surface was found inflamed, and the ileum to the extent of three feet was completely sphacelated, black, and filled with blood. "A band of lymph two inches long, and of considerable thickness and solidity, was attached by one end to the right ovarium and fallopian tube, and by the other formed a tight noose round the mesentery of the mortified intestine." It would appear that the ovarium during pregnancy had contracted adhesion to the mesentery, while the uterus was high in the abdomen, "and that the descent of that organ after parturition, drew tight the band which strangulated the bowels."

Obstinate and extensive Psoriasis cured by rest and depletion. The case of which we give the following abstract, was communicated by Dr. William West. A robust young man was attacked with psoriasis which in a short time extended over his whole body, with the exception of the face and hands. Various internal medicines, and local applications, were employed without effect. At length the antiphlogistic treatment recommended by Dr. Duffin, was resorted to; and after the inflammatory action had been reduced by venesection, aperients, and low diet, the patient was put upon the use of the arsenical solution. But, though these remedies were applied for many weeks, no permanent benefit was experienced, as the disease, although occasionally mitigated, assumed its former violence, as soon as the patient took exercise, or in the slightest degree departed from the vegetable diet. All treatment was now abandoned for some time, in order to allow the patient to recover from the effects of the preceding treatment. When a due degree of vigour had been restored, the antiphlogistic plan was again commenced, but in a modified manner. The patient

was confined strictly to his bed, was placed upon a cooling and scanty vegetable diet, was bled several times, and had his bowels kept open by a combination of cream of tartar and electuary of scammony. Under this plan he rapidly improved, and in less than five weeks was almost completely freed from a disease that had lasted more than six months, and had resisted many active remedies. The advantages of confinement to bed, which was suggested by Dr. Graves in consultation in this case, were thought to be, that a strict antiphlogistic regimen is thus more readily enforced, and less injurious to the constitution, and that the skin is guarded from all sources of external irritation, while it is kept in a perspirable state, very favourable to a cure. The patient had no relapse, nor was any discolouration of the skin left, even where it had been most severely affected.

The extent to which this analysis has already reached admonishes us that we must be more rapid in our survey of what remains, and we shall be compelled to omit much that we should be pleased to be able to introduce.

Stains of the Conjunctiva and opacities of the Cornea produced by nitrate of silver, acetate of lead, &c.—Among several important contributions to ophthalmic surgery by Dr. Jacob, Professor of Anatomy in the Royal College of Surgery in Ireland, we were particularly struck with some remarks upon the subject which we have placed at the head of this section. The professor has for many years noticed in his lectures the stain produced in the conjunctiva by the local use of nitrate of silver; and the same effect has been observed by Mr. Lawrence. Dr. J. thinks the stain indelible even when existing in the slightest degree. He has not observed the application of a strong solution for a fortnight or three weeks to produce the effect; but believes that "its continuance for six weeks or two months will do so. The colour, in cases where the solution has been used for a short time, is a light olive, sufficiently deep, however, to produce very obvious deformity. If a strong solution has been used for a great length of time, the stain is much deeper, colouring not only the conjunctiva of the eye, but also that of the under lid, upon which, from the vascularity beneath, the colour appears still deeper."

But the effects of the nitrate, applied either in substance or solution to ulcers of the cornea, are still more to be dreaded.

"It either adheres to or becomes entangled in the flocculent surface, and if this surface be not a slough and completely cast off, the nitrate of silver, rendered black or brown by exposure, becomes permanently fixed as the ulcer heals, and constitutes an indelible dark speck. I do not, however, mean to say," continues the professor, "that these effects necessarily follow in every case, but I believe the black opacity of the cornea is produced most frequently by the use of the remedy in the very cases in which the application is particularly recommended, that is, in sloughy ulcers, or ulcers which have just cast off a slough." Dr. Jacob does not consider the use of the lunar caustic necessary in these cases; but to those inclined to use the remedy, offers the following recommendation.

"The surgeon, in place of using a pencil of caustic, as recommended by Scarpa, should scrape a little into fine powder, and then taking up a little on the moistened point of a fine camel hair pencil, apply it with a steady hand to the ulcer, waiting his opportunity till the eye becomes fixed, and repeating the application until the surface of the ulcer becomes completely white and decomposed: he must, at the same time, take the greatest care to prevent the lid from falling, or the eye from turning up beneath it, until he has washed the surface with a plentiful discharge of water from a finely pointed syringe."

The injury produced by acetate of lead is even greater, as a general rule, than that which follows the use of the nitrate of silver. "If a solution of acetate of lead be applied to the eye when the cornea is suffering from an ulcer of a particular character, the acetate is decomposed, and a white precipitate is deposited on the ulcer, to which it adheres tenaciously, and in the healing becomes permanently and indelibly embedded in the structure of the cornea. The appearance produced by this cause cannot be mistaken. Its chalky, impervious opacity, distinguishes it from the pearly semi-transparent structure of even the densest opacity produced by common ulceration. It is produced at once, and by a single application of the solution." Dr. J. cannot state positively the precise condition of the ulcer which causes this deposit, but it does not take place in all cases where the acetate of lead is used. It occurs, however, most frequently where sloughing and ulceration attend purulent or pustular ophthalmia, and when the ulcer presents a dirty white, unhealthy appearance.

When a solution of nitrate of silver or acetate of lead is dropped into the eye, it immediately becomes turbid, in consequence of the chemical action of the tears; and a white precipitate is deposited. It is this insoluble precipitate uniting with the animal matter that produces the discolouration.

Dr. Jacob is unable to determine how far the stains and opacities admit of remedy, and is not prepared to recommend any measures for their removal.

Cancer of the Uterus.—In a paper upon this subject, Dr. Montgommery, "Professor of Midwifery to the King and Queen's College of Physicians in Ireland," presents a gloomy catalogue of cases, all of which terminated fatally; nor has he any thing cheering to offer in relation to the treatment. With regard to the use of iodine, which is supposed by some to possess great powers over this complaint, Dr. Montgommery observes that in his hands it has completely disappointed expectation in every case except one, in which it appeared to produce extraordinary benefit in the condition of the patient. In this instance, however, he was compelled to omit it from its effects upon the system, and in a short time the disease resumed all its former violence. Nor does he expect more from the operation of excision. He states his conviction that so far as his experience has enabled him to judge, it is almost universally impracticable, and utterly useless when the disease really exists and is developed. The disease, he observes, occurring usually at a time of life when disturbance in the uterine functions and consequent uneasiness are regarded as matters of course, does not attract notice, in most instances, till completely formed, and attended with consolidation of the neighbouring parts. Indeed, according to the author, the pelvic glands in the great majority of cases are contaminated almost from the beginning. "It is moreover quite ascertained, that the disease, instead of first showing itself in the cervix or os uteri, frequently commences in some of the appendages of the uterus involving the surrounding tissues, or in the upper part of the organ, and thence spreading downwards, manifests itself last in the cervix." As a matter of observation on the subject, the author states that in not one of the cases of the disease which he has met with, would any modification of the operation have been admissible or justifiable.

A communication from Dr. Houston, relative to two newly discovered muscles, and another by Dr. Apjohn on expired air, we should be pleased to be able to notice in this place, but are precluded by our limits. We shall probably find room for an abstract of their contents in the quarterly summary.

Tracheotomy.—Immediately succeeding the last mentioned paper, is a case of laryngitis recorded by Mr. Porter, in which tracheotomy was performed by this gentleman, with the effect of rescuing the patient from immediate death, and restoring him to tolerable health, although the artificial opening is still, and will probably continue to be necessary for respiration. Thus far, however, there is nothing peculiar in the case, as others equally favourable have been recorded. But in this instance the disease of the larynx had proceeded so far that one of the arytenoid cartilages had been separated by ulceration and was discharged through the wound; and a communication had been established between the larynx and pharynx, as evinced by the passage of fluids through the artificial opening when the patient attempted to swallow; and the peculiarity is that comparative health should have been restored under these circumstances. The communication between the larynx and pharynx was ultimately closed by the efforts of nature; not even the stomach tube was introduced to confine the liquids swallowed to the proper course.

Effects of posture on the Pulse.—The next communication is a paper by Dr. Graves upon the effects produced by posture on the frequency and character of the pulse. It is well known that the pulse is usually more frequent in a standing than recumbent position, as well in health as in disease. Dr. Graves has paid particular attention to this subject, and presents us in this communication with the result of his observations.

In a healthy person, he informs us, the pulse in the erect posture is more frequent than in the horizontal, by from six to fifteen beats in the minute; the difference being proportionate to the frequency of the pulse at the time of the experiment. In debility, and in most forms of disease, the difference is greater, amounting in fevers, and in the debilitated state of system produced by fever or other causes, to thirty, forty, or even fifty beats. The pulse is most frequent immediately after the erect position has been assumed, and generally subsides to a certain extent

after a short time, but still continues steadily more frequent than in the recumbent posture. When the individual lies down it rapidly falls to the former standard. "In some the increase in frequency is greater between the horizontal and sitting posture, than between the latter and the erect; while in others the contrary takes place, so that generally the frequency in the sitting posture may be taken as a mean." The pulse is also stronger in the horizontal than the erect posture; so that its *maximum of strength and minimum of frequency* are attained together. *Hypertrophy with dilatation of the heart* is the only disease in which Dr. Graves did not find this difference; and the peculiarity is explained by the increased strength and energy which the left ventricle possesses in this complaint.

The cause of the difference does not appear to have been satisfactorily ascertained. We have always ascribed it to the muscular effort requisite in standing; but Dr. Graves states that he found it to exist even when the individual was retained in an upright position without muscular exertion on his part. Having satisfied himself of this fact, he concluded that the difference might depend upon the difference of pressure exerted on the brain; and inferred that by placing the head lower than the feet, he should produce a still greater retardation of the pulse; but the result of experiment did not accord with his preconceived opinion. No change in frequency was produced by this position; but the strength of the pulse was diminished, in some instances considerably; and irregularity in the beat was not an unusual effect. This Dr. Graves ascribes to the pressure of the blood upon the aortic valves.

It may sometimes be useful in practice to ascertain the comparative frequency of the pulse in the horizontal and erect position, as a measure of the debility of the patient.

Two interesting cases of the extraction of foreign bodies from the trachea are related by Mr. M'Namara, but as their interest depends rather on the skill in diagnosis which was displayed by the operator, than upon any new principles which they are calculated to illustrate, we must deny ourselves the pleasure of transferring them to our pages.

The work concludes with a communication on the subject of a peculiar convulsive disease of infants, by Dr. Marsh, professor of the principles and practice of medicine in the Royal Col-

lege of Surgeons. With a brief account of the contents of this paper we shall close our review, already perhaps too much extended.

Peculiar convulsive disease of Infants.—The complaint to which we refer under this title, was described by Dr. John Clarke in his commentaries on the diseases of children, and by Dr. Cheyne in his treatise on Hydrocephalus; and has been noticed by some other writers in a desultory manner; but as it is not generally well known, nor the principles upon which it should be treated well settled, Dr. Marsh presents the results of his own experience in relation to it, in the hope of supplying the deficiency.

Though mild and in general easily curable in its earlier stages and simpler forms, it is liable, if neglected or mismanaged, to become a very dangerous affection. It consists primarily in a spasm of the glottis; but as it increases in severity, other muscles, particularly those which move the fingers and toes, become engaged; and it ultimately, if not arrested, assumes the form of severe and universal convulsions. The infant is suddenly attacked with difficulty of breathing, is thrown into great alarm and agitation, makes convulsive efforts to respire, during which the face becomes swollen and purplish, and at length recovers from the paroxysm with a long and sonorous inspiration. The attacks frequently return, and are excited by any cause which tends to disturb the system. Sometimes the disease consists solely in a repetition of these paroxysms of spasm of the glottis, without a perceptible derangement of function in any other part, or any apparent irritation from dentition. It appears to depend on irregular nervous action; and generally subsides under mild tonic treatment, a well regulated diet, and exposure to fresh air. In one case Dr. Marsh prescribed half a grain of sulphate of quinia for a child eleven months old; and he has sometimes found occasion to resort to anti-spasmodics, among which none has appeared to him more beneficial than that old fashioned medicine, the "Tinctura Fuliginis." But the complaint is frequently complicated with painful dentition, and with derangement of the digestive functions. Under these circumstances, the spasmodic action extends to the muscles of the extremities, and frequently becomes general; fever sometimes sets in; the brain often takes on disease; and the infant, if not re-

lieved, ultimately sinks under the complicated affection. There is also danger of sudden death from a protracted spasmodic closure of the rima glottidis. In the treatment of these more complicated forms, the accompanying ailments must be primarily attended to. The gums should be lanced, the disordered functions of the digestive apparatus corrected, the febrile symptoms and cerebral disease combatted; and then the remedies proper for giving tone to the nervous system may be advantageously applied. Nothing is so effectual as sending the infant into the country. The patient frequently begins to recover immediately upon breathing the country air, though other remedies may have proved ineffectual. An instance is mentioned by Dr. Marsh in which the convulsions, which had ceased upon the removal of the infant into the country, returned immediately when it was brought into a newly painted house in the city; and the experiment was repeated with the same result. A change of the nurse is sometimes necessary, and if the child has been deprived of the breast too early, a return to it may be necessary. Where life has been apparently extinguished by the spasmodic closure of the glottis, artificial respiration, if instantaneously resorted to, may restore the patient. An instance of such a result was mentioned to Dr. Marsh by Dr. Johnson. The tobacco injection was administered with apparent advantage in one of the cases detailed in the paper before us; but this remedy is, we conceive, too hazardous in infants to be employed with propriety, unless the situation of the patient should be almost desperate.

In closing this very imperfect sketch of the work under review, we wish to express our sense of the benefit conferred, upon the profession by its authors. We know of no plan so well calculated to collect and garner up that fugitive knowledge, which is the result of individual experience; and which, though it may be of little comparative value in single instances, is in the aggregate of the highest importance, and must in the end contribute to advance the interests of medical science almost beyond calculation. In journals, which appear at certain stated intervals, and are usually designed to afford an extended view of the whole field of medicine, it is often necessary, in the absence of new facts, to fill up the pages with speculation or repetition of former knowledge, and to occupy much space merely

in comments upon what has been presented to the public in another shape. In a work such as the Dublin Hospital Reports, which appears only when sufficient matter has been obtained to complete a volume, and the sole object of which is to embody the experience and observation of its contributors, there is no temptation to inflate trifles into undue magnitude, in order to fill vacuities, and no necessity to desert the path of fact and induction, for that of discussion or criticism. We do not, however, wish to undervalue journals or reviews. They have their uses, and indeed in the present state of the profession, are indispensable, if for no other purpose, simply to serve as a bond of union between the floating masses of medical knowledge, which would otherwise scatter themselves infinitely beyond the reach of individual vision. Our object is simply to express our conviction, that the plan pursued by the authors of the Dublin Hospital Reports, is incomparably the best for the purposes it is designed to fulfil. It is superior to the journal system in this respect, that it presents us with a magazine, from which medical architects may, in all future time, draw the materials of their theories and systems, instead of a workshop in which materials, finished and unfinished workmanship, the refuse or broken fragments of former manufactures, and wares which need repair from the injuries of time, or the changes of fashion, are all mingled together to answer the immediate wants of the community. It is also greatly preferable to the plan of writing separate books, whenever any thing is in the possession of individuals which they deem worthy of communication to the public. No one is willing to write a book unless he can swell it to a certain magnitude, and as very few have original matter sufficient to fill even a small volume, it is necessary either to indulge in unnecessary and tedious details or fruitless speculation, or to exercise ingenuity in dressing up former knowledge, so as to give it some air of novelty. Many experienced physicians who have valuable information to communicate, will neither submit to the drudgery, nor condescend to the littleness of this kind of work, even for the gratification of beholding their name on the back of a volume. Thus on the one hand, the gem of real knowledge is buried in a mass of rubbish and requires a wearisome search for its discovery; on the other, it goes down to the grave with

its possessor, and becomes as though it had never existed. It is evident that these remarks do not apply to the preparation of systems in the various branches of medicine, which are necessary to facilitate study, and in which originality is not claimed except in the mode of arrangement. In the Dublin Hospital Reports, both the inconveniences above alluded to, are in great measure avoided. The writers, among whom are included the most eminent medical men of Ireland, can afford to be brief without the fear of seeming insignificant, and the consequence is, that almost every page sparkles with novelties in thought or in fact. We are pleased to be able to state that the first part of another volume is to make its appearance in the spring of 1832.

ART. VI.—DISEASES OF THE CHEST.

Clinique Médicale, ou Choix d'Observations recueillies à l'Hôpital de la Charité (Clinique de M. LERMINIER,*) par* G. ANDRAL, *&c.*

Clinical Reports, or Selected Cases, drawn from the practice of M. LERMINIER, *in the Hospital of la Charité, by* G. ANDRAL, *&c.*

In two preceding numbers of this Journal, we endeavoured to make our readers acquainted with the more prominent views presented by M. Andral on the diseases affecting the mucous membrane and parenchyma of the lungs. There remains for us to examine that portion of the work which is devoted to the investigation of the morbid affections of the pleura constituting the covering of the lungs, and that forming the immediate lining of the cavities in which these organs are lodged. The membrane now referred to, possesses a structure and character widely different from what appertain to the other tissues composing the lungs. The morbid products have likewise a very distinctive character.

In the experiments made upon animals, by injecting slightly irritating fluids, or by introducing foreign bodies into the cavity of the pleura, at a very early period a portion of the membrane loses its natural hue, and acquires a reddish tint. According to our author, in this stage, the redness depends on the sanguineous injection of the vessels distributed through the cellular texture immediately under the pleura,—this membrane still retaining its transparency, and being still devoid of red vessels. If, however, the inflammation becomes more intense, then the membrane will be found having its vessels more or less injected with blood, and presenting the appearance of minute dots, streaks, patches, and serpentine bands of a red colour, or this colour may be uniformly diffused over a surface more or less extensive. This latter appearance is stated to be of rare occurrence.

When the inflammation is fully established, the pleura will be found to have lost its transparency. Still scarce any degree of thickening can be observed, and the natural consistence of the membrane remains unaltered. On some occasions the separation of the pleura from the pulmonary parenchyma can be more easily effected than in the healthy state of the membrane, as if the connecting cellular tissue had participated in the inflammation, and become more easily torn.

The alterations in the secretions from an inflamed pleura, are more numerous and more various than the changes observed in the texture of the membrane. We have often occasion to observe, that these alterations in the secretions are the most obvious, when the membrane has undergone no perceptible morbid change.

The quantity of fluid poured into the chest may be so great as to compress the lungs, also to press down the diaphragm, and thus cause a prominence of the abdomen. By this accumulation of fluid, the intercostal space will be extended and appear more bulging than natural. The mediastinum often yields to the pressure of the fluid contained in either cavity of the thorax. Hence where the accumulation has taken place on the left side, the heart has been thrust to the right, and the apex lying immediately behind the sternum, the pulsations, during the lifetime of the patient, have been felt on the right side of the thorax.

The character of the secretion is exceedingly various.

The fluid contained in the cavity of the thorax may exhibit all the characters of serum, being of a light straw colour, limpid, and transparent. A slight tinge of red observable in the pleura, and some filamentous concretions on its surface, may afford the only evidences of inflammation, whose existence, during the lifetime of the patient, was announced by very unequivocal symptoms; more frequently we observe flakes floating in a limpid serum, or precipitated to the bottom of this fluid. The flakes being very minute and diffused through the effused serum, will destroy its natural colour and transparency. Occasionally the fluid contained in the cavities of the pleura presents all the essential characters of pus. Instances have been noticed of a kind of gelatinous matter being contained in the cavities of the chest. This concrete form of the effused matter is owing to the presence of fibrine, so frequently observed as one of the products of inflammation. A portion of red blood may likewise be effused, imparting more or less of its characteristic colour, at times appearing in coagulated masses; or the red particles may be separated, leaving a concrete substance resembling the fibrine of the blood.

The various effusions found in the cavities of the pleura are for the most part inodorous, except when a communication is established through the walls of the thorax, or when there exists a fistulous opening in the lungs admitting of the contact of atmospheric air.

Collections of air have occasionally been observed. They may be the immediate product of secretion; but more frequently they result from the admission of air through an opening in the lungs.

In inflammation of the pleura the effused fluid is naturally disposed to concrete and pass into the solid state. Hence are formed the pseudo membranes presenting such variety in figure, colour, consistence, thickness, and organization.

In the early stage immediately as this concretable matter is secreted, it may be considered as a compound of fibrin and serum. The proportions have never been ascertained. From what we have observed we believe that the serum in point of quantity will be found the predominant principle, though the power of becoming solid depends upon the presence of the

fibrin, termed, by Mr. Hunter, and his immediate disciples, coagulable lymph.

This concrete matter is capable of agglutinating and uniting opposing surfaces. In the further progress it becomes organized and assumes all the properties of membrane. We remain ignorant of the process by which the chemical change is effected in this exudation, and how the fibrin and serum which were first observed have their place supplied by a substance convertible into gelatin.

At what period this concretable substance may be formed on the surface of an inflamed pleura, and at what period it may become perfectly organized cannot be determined by any experiments and observations which have yet been offered. Some experiments are recorded by Dr. Andral, but they afford no definite information on a subject so interesting in pathology.

The possibility of the pseudo membranes being absorbed is discussed by our author, and he inclines to the affirmative; but he does not support his opinion by those arguments which we think might be adduced in its favour. We can only reason from analogy, as the proof of such a process going on within the thorax must be wanting. But in parts coming more immediately within the cognizance of our senses, as the membranous concretions formed at the margin of the pupil, such adventitious matter has been known to disappear. And according to the doctrine of Mr. John Hunter all adventitious formations have an inferior vitality, and admit of being removed by the power of the absorbents.

Dr. A. has recorded some very interesting cases, showing that the pseudo membranes may be affected with tubercles, cancer, or be the seat of ossific depositions.

The various causes leading to the production of pleurisy have been so frequently noticed by medical writers, that we deem it unnecessary to accompany our author in this portion of his inquiries; but shall proceed to extract the more important information relating to the signs characterizing the disease.

It may seem a work of supererogation to bring before our readers an enumeration of all the symptoms which have been usually observed to accompany inflammation of the pleura. We believe, however, that on a subject so interesting and so deeply affecting the knowledge of the nature and probable issue

of this disease, the attention of the practitioner cannot be too earnestly directed to the inquiry into the full value of every symptom, taken singly or collectively. In the succession of medical opinions, we find greater precision gradually developed, and what was at first dark and mysterious becomes in the progress of science to be clearly and distinctly understood. The discrimination between inflammation of the pleura, and that of the parenchymatous substance of the lungs was deemed, even by Cullen, to be almost impracticable. A more scrupulous attention to the various phenomena accompanying the disease, together with the noting of the morbid appearances observed after death, have certainly tended to introduce a more intimate acquaintance with the pathognomonic signs. Of late years percussion and auscultation, as applied to exploring diseases of the chest, appear to have afforded to many practitioners more determinate means of ascertaining the specific changes resulting from the morbid affections of the organs of respiration.

In the book before us the author has entered into a full disquisition on the value of the several symptoms observed in pleurisy. We shall endeavour to give in rather a condensed and abridged form the principal observations appertaining to this subject.

The pain so generally felt in pleurisy may vary in seat, intensity, and duration. The more ordinary seat of this pain is about the part covered by the breast; more rarely it is referred to the axilla, to some spot behind the sternum, beneath the clavicles or between the shoulder blades. The pain may be confined, or it may be diffused over a large portion of the chest. When the pleura covering the diaphragm is the seat of inflammation, the pain is generally felt in the hypochondria. The pain is commonly observed from the very commencement of the disease. At first it is often fugitive, and some days may elapse before it becomes fixed. In many instances the pain is very acute and unremitting, or there may be intervals of comparative ease. The inspirations are short, and the patient appears apprehensive of aggravating the pain every time he draws his breath, and the same motive induces him to suppress the slightest effort to cough. In the progress of the disease the pain gradually diminishes in intensity, becomes ob-

scure, and may entirely cease before the termination of the disease. Sometimes the pain is suddenly aggravated, and creates a recurrence or severe increase of inflammation.

The pain or stitch in the side so often observed in cases of peripneumony, is considered as owing to the inflammation having extended from the parenchyma to the pleura investing the lungs.

In estimating the value of this symptom as characteristic of inflammation of the pleura it is incumbent on us to state, that the pleuritic stitch has not been noticed in some instances when after death the existence of the disease has been rendered unequivocal.

Rheumatic pain affecting the muscles of the thorax may be generally distinguished from pleurisy, by the absence of the other symptoms characterising this disease, and by pressure on the ribs, as well as on the intermediate spaces, causing an aggravation of the pain.

There is commonly great oppression in the breathing, the inspiratory efforts are short, quick and in rapid succession. When effusion has not taken place, the dyspnœa is attributable to the pain excited by the motion of the parts concerned in respiration. In every instance of inflammation there is a natural disposition to keep the affected part at rest. But the motions of the vital organs are incessant. Life would cease without the continual action of the lungs. The demands of the system are however supplied by the more frequent, yet less expansive, inspirations of the atmospheric air so essential to animal existence. The dyspnœa may not be observed while the patient remains quiet in bed, yet is well marked when he engages in conversation, rises, or makes any considerable effort. The compression of the lungs caused by the effusions into the cavities of the pleura will hardly fail to occasion great oppression in the breathing. Exceptions however do occur, and our author has given a remarkable instance (case 10). But where such collections have been observed without causing dyspnœa, they have been confined to one cavity, the lung on the opposite side admitting of more than its normal expansion, so that the system may be supposed not to suffer from the want of a due supply of air.

The dyspnœa continuing severe during the course of the dis-

ease, announces a fatal termination. Often the respiration becomes free long before the effused fluid is absorbed. For the knowledge of this fact we are indebted to the information afforded by percussion and by auscultation, whether immediate or through the medium of the stethoscope.

The signs derived from the motions of the thorax serve to indicate certain modifications of the disease in question. In cases of costo-pulmonary pleurisy, inspiration will be effected by the contraction of the diaphragm. When the pleura covering the diaphragm is inflamed that muscle remains quiescent, and the expansion of the thorax is accompanied by a notable elevation of the ribs.

In pleurisy there are no violent fits of coughing. If cough accompanies the disease, it is short, frequent, suppressed, and for the most part dry. When expectoration is observed the sputum resembles that of catarrh. Upon the whole no very satisfactory inference can be drawn from the character of the cough and the accompanying sputa.

The patient lying on the affected side has been considered as pathognomonic of effusion. Dr. A. gives as the result of his experience, that in a great majority of pleurisies, with or without effusion, the patients lie on the back, though many incline somewhat to the affected side; and only a few were observed to lie directly on the side affected. When the effusion is considerable the patient never lies on the opposite side. When the inflammation affects the pleura covering the diaphragm, the horizontal position becomes very painful, and the patient requires to be supported in bed with his trunk erect, or even inclined forward.

Taken collectively, the foregoing symptoms afford strong presumptive evidence, that there is effusion into one of the cavities of the pleura; but more positive assurance may be obtained by mensuration, percussion and auscultation; and these taken in conjunction with the former signs, render the diagnosis in pleurisy very obvious and certain.

We often observe that the side in which the accumulation takes place is larger than the opposite one; and the mere increase of five or six lines is sufficient to make this evident. Dr. Andral states that he never knew it to exceed an inch and a half. A projection of the intercostal spaces, and a fluctuation,

tion of the pulmonary parenchyma, may not be fully developed; on directing the patient to lie on his stomach, the crepitating rattle will become very sensible and the œgophony will be converted into bronchophony. The existence of the effused fluid will be recognized by the following signs: a distinct sound resembling that produced by rubbing two bodies together by jerks, according in point of time, and corresponding in degree, with the motions of inspiration and expiration, will be perceived by the ear, assisted with the stethoscope applied to the side of the patient."

The first three cases recorded by Dr. Andral, are considered by him as instances of simple pleurisy without effusion; the patients recovered. We are furnished likewise with the history of eight cases of inflammation of the pleura, accompanied by effusion: as the patients likewise recovered, the presence of the fluid was inferred from the evidence afforded by percussion and auscultation. The third case in this class was occasioned by external violence. The ninth case in this collection, or the twelfth taken numerically in the order given by our author, proved fatal: and the signs of effusion afforded by percussion and auscultation during the lifetime of the patient, were verified after death. In the next case there was a collection of fluid in the cavity of the pleura, resulting from the communication with a tubercular excavation in the lung. The succeeding case affords an example of pleuritic effusion connected with gangrene of the lung. The fifteenth and sixteenth cases presented an effusion of blood on examination after death. The seventeenth case is that of a woman aged fifty-five; in this instance, after some days residence in the hospital, a tumour was observed below the right clavicle, and extended nearly to the mamma, which being opened, gave vent to a large quantity of pus. Four days after the operation death took place. Numerous cases are given with the view of illustrating the phenomena of partial inflammation of the pleura.

The 23d case affords an example of inflammation affecting the pleura of two opposing lobes, and terminating in the production of a cyst, containing about half a pint of pus. No indications of the presence of this fluid were perceived by means of percussion, or of the stethoscope. Cases 29, 30, 31, 32, are instances of inflammation with effusion occurring in both pleuræ.

ART. VII.—SOUTHWOOD SMITH ON FEVER.

A Treatise on Fever. By SOUTHWOOD SMITH, M. D., *Physician to the London Fever Hospital. London printed,* 1829. *Philadelphia re-printed, Carey & Lea,* 1830: *pp.* 448.

[CONCLUDING ARTICLE.]

In our previous analytic article, we followed the author through his first five chapters, on the ancient and modern doctrines of fever; on its varieties and proper classification; and on synochus, typhus, and scarlatina. The chapters which yet remain to be analyzed are severally on the pathology of fever; the relation between the phenomena of fever, or the theory of the disease; the causes of fever; and the treatment.

CHAPTER VI. *Pathology of Fever.*

In the history of the symptoms of fever, the author very properly sees nothing but the means of determining the nature of the *events* of which the symptoms are the signs. The events are the morbid changes, and we arrive at a knowledge of these, by first noting the symptoms during life, and secondly examining the condition of the organs after death. A comparison of the symptoms with the state of the organs as subsequently ascertained, teaches us what the symptoms indicate. By multiplying observations, we come to know all the important symptoms that arise, and by making a large number of morbid examinations, we equally arrive at a knowledge of all the important changes in structure; and by comparing, in an extensive series of cases, the symptoms with the altered states, we acquire the means of ascertaining, with a high degree of probability, the presence of an event which we cannot see, by the presence of the sign which we can see.

"In proportion as our knowledge becomes perfect, we are thus enabled, during life, and at the bed-side of the patient, to see what is going on within his brain, within his lungs, and within his intestines, with as much distinctness and certainty, as we could, were the cases in which these organs are inclosed, and the organs themselves, transparent. The highly interesting and important fact demonstrated by the exam-

tion of the pulmonary parenchyma, may not be fully developed; on directing the patient to lie on his stomach, the crepitating rattle will become very sensible and the œgophony will be converted into bronchophony. The existence of the effused fluid will be recognized by the following signs: a distinct sound resembling that produced by rubbing two bodies together by jerks, according in point of time, and corresponding in degree, with the motions of inspiration and expiration, will be perceived by the ear, assisted with the stethoscope applied to the side of the patient."

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"In proportion as our knowledge becomes perfect, we are thus enabled, during life, and at the bed-side of the patient, to see what is going on within his brain, within his lungs, and within his intestines, with as much distinctness and certainty, as we could, were the cases in which these organs are inclosed, and the organs themselves, transparent. The highly interesting and important fact demonstrated by the exam-

ination, in the manner of which we have just spoken, of large numbers of fever patients is, that the changes which take place in the organs are uniform; that the symptoms by which these changes are denoted are uniform, and, therefore, that it is possible to arrive at a perfect knowledge of the phenomena of fever." p. 189.

We are not so sanguine as to the perfectibility of our pathological knowledge, as the author would seem to be from the above extract; yet still we think that much certainty may be arrived at by pursuing the subject in the cautious and philosophical manner which he here lays down.

The author considers the pathology of fever under the two heads of the pathology of the solids, and the pathology of the fluids. The former he very correctly considers as most important and best understood. Indeed, with respect to the pathology of the fluids, very little if any thing is known. This department, however, may grow up to be of great importance. It belongs properly to the chemical pathologist. The knife of the anatomist, how keen soever its edge may be, has accomplished almost all that it is in its power to effect. The eye, aided by the strongest magnifying powers, has noted the minutest appearances of morbid structure. It seems that a nicer dissection is necessary, if we wish to push our inquiries further; and the means of such a dissection are furnished by the principles of chemistry. The nicest mechanical agent which can be conceived of is not competent to separate particles which are easily disunited by the influence of chemical attraction. Here then is a new and almost untried field of research, which it behoves us to cultivate. The pathologist ought not to be content with inspecting after death the appearances of different parts. The fluids during life as far as practicable, and the solids and fluids after death, ought to be subjected to analysis, or at least to examination by tests or re-agents. We hope the time is not far distant, when the case of chemical re-agents will be as constant an accompaniment of the pathologist, as the scalpel and magnifying glass.

1. *Pathology of the Solids—Appearances in the Head.* The arachnoid is the part most constantly diseased. It is either more vascular than natural, or else, it is thickened, opake, and milky. Not uncommonly, it is united at several points with

the dura and pia mater. The dura mater is less constantly changed in appearance. It is sometimes more vascular than natural, and frequently either adheres with preternatural firmness to the scull-cap, or is quite detached from it, in consequence of effusion. The pia mater is seldom changed in structure, but it is generally preternaturally vascular. This is also frequently the case with the theca enclosing the spinal cord.

The brain is seldom healthy. The most usual change is a higher degree of vascularity than natural. This change is sometimes confined to the surface, and sometimes is more manifest deep in its substance. In the latter case, it is evinced by the greater number of bloody points rendered visible by an incision. The substance itself is sometimes softer, sometimes firmer than natural. Occasionally the entire cerebrum is softer than natural; at other times, only particular portions of it. Abscesses in its substance are very rare. Where the cerebrum is preternaturally firm, the firmness is usually general. The cerebellum is always softer than the cerebrum; and this disparity may so obtain, as that the cerebrum may be firmer, and the cerebellum softer than natural. The pituitary gland also is very constantly softened, and often in a state of suppuration.

The cavities of the brain exhibit an excess of secreted fluid from the quantity of a drachm to several ounces. Common as this is, it is still more common to find an excess of fluid between the membranes; often between the dura mater and the arachnoid, almost always between the arachnoid and pia mater. The fluid effused beneath the arachnoid is gelatinous; but every where else it is like serum, being thin, transparent, and of a straw colour. Now and then it is thicker in consistence, opake, and even bloody; and sometimes that beneath the membranes contains flakes of lymph, or is mixed with pus.

The author makes a remark here which ought never to be lost sight of. It is this, that the conditions of excessive vascularity and increased secretion are never co-existent; on the contrary, the two states are inversely to each other.

The substance of the spinal cord is seldom changed; but its membrane is frequently not only highly vascular, but likewise contains a much larger quantity of fluid than natural.

Appearances in the Thorax.—In the thorax the mucous membrane of the bronchi is the part most usually diseased; and its

morbid condition, while it is specific and uniform, is most characteristic of the febrile state. This morbid condition consists in preternatural redness, uniformly and strikingly darker than in common inflammation. This darkness increases as the tubes of the bronchi diminish in size, from the slightest discernible shade in the large trunks to one nearly black in the minute branches. This change in colour of the membrane indicates not merely greater vascularity, but an alteration of structure, as is proved by a preternatural thickening of its substance. The tubes themselves contain more or less fluid, which consists of mucus mixed with pus.

In scarlet fever the changes are somewhat different. The mucous membrane of the trachea, larynx, tonsils, and soft palate is inflamed; but the redness is much more vivid than that characteristic of continued fever without an eruption. But what appears to the author to be remarkable, and justifies to his mind the division of scarlatina which he has proposed, is, that when the cases are severe, the colour of the membrane becomes much darker; the deepness of the tinge increasing with the severity of the affection, until, at length, the colour closely resembles that which is peculiar to ordinary fever.

With regard to the state of the lungs in fever, Dr. Smith has so constantly found them either engorged with blood or infiltrated with serum, as to consider himself entitled to the conclusion that these appearances are essential parts of the morbid phenomena of the disease.

The author next enumerates additional morbid changes, which are found in examining those who die of fever, but which, not being always observed, are, therefore, not considered to be essential to the disease. These are inflammation and adhesion of the pleura, from the smallest to the greatest extent; the effusion of serum and lymph, and the formation of pus and adventitious membrane; hepatization and tubercular disease of the lungs; ulceration and abscess in every extent, and hæmorrhagic and calcareous depositions, together with enlargement and melanosis of the bronchial glands.

Appearances in the Abdomen.—The viscera of this cavity generally appear more vascular, and invariably darker than natural. The part which is most constantly diseased is the mucous membrane of the intestines, especially that portion of it

which lines the ileum and cæcum. The chief varieties which it exhibits are three; namely, vascularity, thickening, and ulceration. Increased vascularity is the first stage of disease, thickening the second, and ulceration the third. In a great proportion of cases the increased vascularity is confined to the lower end of the small intestines. The thickening may arise either from deposition of organized matter in the substance of, or beneath, the membrane, or from both these causes. Thickening from interstitial deposition is often of very considerable extent; but when from deposition underneath the membrane it appears to be confined to the places occupied by the mucous glands. These glands are found in all states, from the mere abrasion of their surface to the entire ulceration of their substance. The ulceration occurs with two characters. If it takes place while the mucous coat is in a state of simple vascularity, the ulcer will be extensive and superficial; if, on the contrary, it occurs in the thickened membrane, it will be less extensive, but more deep, and its margin will be more elevated and its surface more ragged. It is in this form of ulcer that perforation of the intestine generally occurs. In proportion to the extent and degree of these changes in the intestine, will be the inflammation, enlargement, induration, and suppuration of the mesenteric glands.

The author describes the state of the spleen as follows:

"It is quite remarkable with what uniformity the spleen is diseased in fever. In almost every case of genuine fever hitherto examined, it has been found altered in appearance, and deranged in structure. Its natural purple colour, is changed to a deeper and darker tint, and on the removal of the peritoneum that invests it, its substance on being slightly touched with the finger, breaks down into an almost fluid mass." p. 202.

According to Dr. Smith's observation, the pancreas is very constantly diseased in fever. The state in which he found it, was the very reverse of what was found in the spleen. It was always firmer than natural, and often exceedingly indurated, even to approach to a cartilaginous consistence in that portion of it attached to the duodenum.

Speaking of the stomach, the author says:—

"This viscus having been regarded in France as the great source and seat of fever, particular attention has been paid to

the appearance it exhibits after death. The uniform result of the most careful examination of fatal cases in London, is, that the mucous membrane of this organ, is less frequently, less severely, and less extensively diseased, than any other portion of the same membrane. Occasionally it is more vascular than natural. This vascularity is seldom general; it is almost always confined to its pyloric half. In the few cases in which it has been very great, the membrane has been observed to be thickened and sometimes softened; but no instance has occurred in which it has been the seat of a single ulcer." p. 203.

According to the observation of Dr. Smith, the liver is least frequently deranged in structure, of all the abdominal viscera. The blood contained in it is peculiarly dark and always fluid. The gall-bladder contains a large quantity of bile, which is either pale and more fluid than natural, or extremely dark, and very much inspissated.

We have thus condensed from the author, the account of all the morbid conditions of the abdominal viscera, which are considered by him as peculiar to fever; but there are others which form no part of the febrile changes. These are, inflammation of the peritoneum; effusion of lymph upon its surface, or of serum into its cavity; agglutination of the intestines; inflammation of the mesentery; false adhesions between the liver, spleen, and mesentery; tubercles in the liver; induration of its substance; tubercles and abscess of the spleen; thickening of the coats of the bladder, and inflammation of its mucous membrane. In the female, vascularity and enlargement of the ovaria, to which hydatids are sometimes attached; vascularity of the external surface of the uterus, and inflammation of the os tincæ and of its internal membrane. Disease of the kidney in either sex is a rare occurrence.

We have now gone through the morbid appearances in the head, thorax, and abdomen, which the author considers essential to the existence of fever. This then is an outline of his pathology of the disease, so far as the solids are concerned; a pathology which he abundantly supports by the details of ninety-six cases, which occupy about one hundred pages of his treatise.

After going through the cerebral cases, the author makes some summary observations respecting them, of a highly in-

teresting nature, from which we shall make some extracts. He says,

"From the study of these cases, we see that the process of disease is as uniform as that of health, or of any other process of nature; that certain phenomena constantly take place; that they follow a determinate order; that the events seldom or never vary; that their relations to each other never change; that in these cerebral cases of fever, a preternatural fulness, and apparently increase in the number of the vessels of the brain and spinal cord, or of their membranes, is always present; or that if a case do now and then occur, in which even *no* preternatural vascularity can be discovered, such an event is exceedingly rare; that this fulness and increase of the blood-vessels is either identical with, or passes into the state of inflammation; that the state of inflammation, after a certain period, produces results which are known to be effects of inflammatory action in other parts of the body; that these products of inflammation consist of a given number; that the whole of that number never concurs in any one given case, but that two or more are frequently found in combination; that the laws by which any one of them is formed rather than any other, are at present wholly unknown; while instances do occasionally occur, although they are extremely rare, in which the state of mere vascularity alone subsists without the formation of any inflammatory product that can be discovered.

"From the study of the history of these same cases, we further see that the indications of this inflammatory state of the brain and spinal cord, or of their membranes, are as uniform as the existence of the state itself; that certain symptoms invariably accompany it; that these symptoms not only declare with absolute certainty, that this process is going on, but likewise, in general, clearly mark its progress; and that this series of symptoms, and the place in which each stands in the series, is as follows: namely,

"Pain in the head, or giddiness, or some other uneasy sensation in this organ, attended with a loss of sleep and with a derangement in all the sensorial faculties—these are the signs of the presence of the disease in the brain or its membranes. Pain in the back, loins, or limbs, or diminution of the power of voluntary motion—these are the signs which mark the existence of the disease in the spinal cord or its membranes. These symptoms having been present a certain time, and at length succeeded by diminution of the pain or uneasiness, *without a corresponding diminution in the other febrile symptoms*, but with an *increase* in *some* of them; for instance, with an increase of the sleeplessness and restlessness; at last, total cessation of all pain or uneasiness, together with a diminution

of the sensibility—these are the signs which mark the progress of the disease, and which, in general, denote a transition from the state of mere inflammation to the formation of some inflammatory product. Thus far the change of state is certain and the signs which denote it invariable; to the latter other symptoms are added, which occur in the great majority of cases, but not in all; namely, delirium, muscular tremor, involuntary and unconscious stools, acceleration, and, in general, increased and increasing weakness of the pulse." p. 242, et seq.

Dr. Smith admits that, in the present state of our knowledge, we are ignorant of the laws by which, in one case, the bloodvessels pour out serum, in another secrete pus, in a third soften, and in a fourth indurate the cerebral substance; so that we cannot know, by any invariable signs, what is the precise nature of the diseased product formed. Neither does the author conceive that this kind of information would be of much practical importance, supposing that we are possessed of other points of information which are within our reach. Thus he says:

"In the mean time, what we may know, and ought to know, is when inflammation exists: what we may in general further know is, when some product of inflammation has been poured out still more to oppress the brain: to the thoughtful and discerning practitioner, it would be without doubt, a high satisfaction to be able to carry his diagnosis still further, and to ascertain *what* that product is; the desire to arrive at such precise and perfect knowledge appears to me to be in the highest degree meritorious: the constant and unwearied endeavour to acquire it may not always succeed with reference to the particular object immediately pursued, but it cannot fail to increase his power and to strengthen his habit of observation; and the sure reward of his devotion thus truly honourable and faithful to the duties of his profession, if it should not be, as it may not invariably be, the confidence and the gratitude of his patient, will at least be the proud consciousness that he has deserved both.

"Were it possible to ascertain with absolute certainty and with perfect exactness, in which of its various modes inflammation of the brain and its membranes terminates, it would be a subject of interest, as far as we can at present perceive, rather to the physiologist and pathologist than to the practical physician. To the latter the great fact which is of paramount importance that he should know is, that inflammation is going on in the brain of his patient, and that if he cannot put a stop to it in the course of a day or two, it will in that short space

of time terminate in some irreparable change of structure, of which death will be the inevitable consequence. This, it is again repeated, it is always in his power to know; and as there is no one fact which can or which ought to have so much influence upon his practice, so there is no diagnosis which it is of so much importance that he should acquire the habit of forming." p. 245, et seq.

The author next gives the details of twelve fatal thoracic cases, with their appearances on dissection, which are not accompanied by any general remarks. These are followed by the narrative of thirty-one abdominal cases with dissections.

The abdominal cases are summed up by a few pages under the head of general results. The order in which they are placed, presents a complete series of morbid changes in the intestines, from the slightest vascularity to the most intense inflammation; and from mere elevation, or superficial abrasion of the mucous membrane, to the most extensive and deep ulceration. The author contends for the great sameness in the morbid appearances as far as they go, where the contents of the abdomen are implicated; the difference being merely a difference in degree. He also contends for the remarkable uniformity of the symptoms denoting these morbid changes. Their great peculiarity, according to him, is *their want of prominence.* They may always be discerned, but they seldom force themselves upon our notice. The reason why they have this character is that they take place in a state of the system, incompatible with acute sensation of any kind. The state of system alluded to is an existing affection of the brain. Thus according to the author's pathology, the affection of the intestines in fever is never a simple or single affection, but one preceded and accompanied by an affection of the brain. Now the certain consequence of the cerebral affection, is a diminution of sensibility; and it is, therefore, quite impossible, unless the cerebral affection be unusually slight, that the intestinal affection should ever be attended with violent pain. It is not then to the patient's own complaint of pain, that the practitioner is to trust for the discovery of abdominal affection in fever. But though he will seldom complain of pain, yet, in the great majority of cases, the abdomen is tender on pressure. Where it is not, the cerebral affection must be peculiarly se-

vere. Another symptom is still more constant than tenderness on pressure, and that is, a loose state of the bowels. When both concur, there can be no doubt, according to the author, that the diseased process is going on in the intestines. But as the tenderness may be obscured or lost by the intensity of the cerebral affection, so, according to Dr. Smith, in the progress of the intestinal disease, the bowels sometimes become regular, or even constipated. In the absence of both these signs, the practitioner, who sees the patient for the first time while in this stage of the disease, must depend on its previous history in making up his judgment.

On account of the importance of the diagnosis in the abdominal cases, the author thus briefly recapitulates the signs by which they are characterized.

"They are, tenderness of the abdomen on pressure; redness of the tongue, especially at the tip and edges; loose stools, in general preceded by nausea and vomiting, and in the most exquisitely marked cases, and in their advanced stage, followed by a mixture of blood in the stools, and a swollen, hard, and tympanitic state of the abdomen. All these symptoms by no means always concur in the same case; but the presence of one or two of them will be sufficient to guide the attentive observer to the knowledge of the disease." p. 302.

The pathology of the mixed cases is next illustrated by the author, by twenty-one examples of this form of febrile disease. This is followed by some general conclusions, strikingly and eloquently expressed, with which the pathology of the solids is closed.

From what he has previously said, the author conceives himself entitled to assert that the pathology of fever consists in the history of inflammation; and the description of the individual changes that take place in the organs that constitute the febrile circle, is an enumeration of the various products of inflammation which are formed within them. Except when the system is completely overwhelmed by the force of the attack, the severest cases are those in which the inflammatory action is highest, and seated in the greatest number of organs. The mixed cases, therefore, present examples of the most mortal form of fever, witnessed by the author in the London fever hospital; and the reasons why they are so are summed up in the following masterly manner.

"These are the cases in which the symptoms are most urgent, and in which they run their course with the greatest rapidity; these are the cases in which the debility is most striking; in which it comes on the most early, and proceeds to the greatest degree of prostration; these are the cases which are the most purely typhoid, the most truly adynamic; these are the cases which, in general, commence with the most sudden and alarming deprivation of physical and mental power; in which all pain and uneasiness are soonest lost in stupor; in which the stupor most rapidly increases to insensibility; in which delirium comes, perhaps, as early as the third or fourth night, accompanied with its attendant, muscular tremor, and too often with its most formidable ally, erysipelas; in which, at this early period, the respiration is short and hurried, the skin dusky, the colour of the cheek purple, the tongue brown and dry, the lips and teeth sordid, the abdomen tender, and the stools loose; in which, in a day or two more, the abdomen is swollen, tense, and tympanitic, the stools passed in bed, the patient prostrate on his back, completely senseless and powerless, while the pulse is 120 or 130, and so feeble that it can scarcely be distinguished. But what is this debility? in what does this adynamic state consist? It consists of a peculiar affection of the nervous system, followed rapidly by intense inflammation of the brain or of the membranes, or of both; by intense inflammation of the mucous membrane of the bronchi, and by intense inflammation or extensive ulceration of the mucous membrane of the intestines. And why is the patient weak or adynamic? Because he is not only assailed by an affection of the nervous system, which deprives the organs of the stimulus necessary to enable them to perform their functions with due vigour; but, at the same moment, inflammation is set up in three of the great systems, the healthy action of which is most essential not only to strength but to life; thus the citadel is attacked at one time at three of its capital points." p. 336 et seq.

With regard to those cases in which the system is overwhelmed, the author holds the following language.

"Now the peculiarity in these cases is, that the internal organs, after death, exhibit no signs of inflammation, unless vascularity be inflammation. The organs which, in ordinary cases, are inflamed, are in these cases tinged with blood. Are the terms debility or adynamia appropriate expressions to designate even this condition of the organs? Just as appropriate as they would be to express the condition of a person who is struck dead by lightning, whose muscles are incapable of contraction, and whose blood will not coagulate. Those who apply these terms even to such forms, and *à fortiori* to any other

forms of fever, must be ignorant either of the nature of the disease, or of the constitution of the human mind. If they know the disease, they know that the patient appears to be weak, because the primary operation of the disease is upon the nervous system—an operation which, as has just been stated, while it disturbs that due and equal distribution of nervous influence which is necessary to the healthful action of the organs, and, therefore, to the general strength of the system, is not incompatible with, but promotive of an excitement of the vascular system, which terminates in inflammation. Debility is the last, the ultimate result of the disturbance of the functions of a certain series of organs; but part of this very disturbance of function, and a most important part, a part which exerts the greatest influence over the progress of the disease, and the life or death of the patient, consists not in the weakened, but in the augmented strength and the increased activity of the vascular system. To designate the ultimate result on the system by a term which gives an entirely false view of the individual processes in the economy, by which that ultimate result is produced, must, we repeat, arise either from an ignorance of the true nature of those processes, or from not reflecting on the influence which words exert over the manner in which the human mind conceives of things. For the sake of the progress of the science of medicine, for the sake of rendering the language of medicine the correct expression of the knowledge which the science has actually attained, and, above all, for the sake of accomplishing the great object of medicine, the preservation of human life, it is high time that these terms with which physicians have so long allowed their minds to be abused, should be banished from medical nomenclature, or, at any rate, from that part of its nomenclature which appertains to fever." p. 338 et seq.

II. *Pathology of the Fluids.* We have already made some general remarks on what we conceive to be the importance of the investigation of the pathology of the fluids; and we have not space to enlarge on this head separately. We think, however, that the author has undervalued this department of inquiry. It is true, that changes in the fluids, compared with those in the solids, are secondary, both in point of time and of importance; still the detection of these changes may be highly important in identifying a particular state of disease, not to be distinguished by any other means. If the chemical investigation of morbid fluids has not, to any extent, been practically useful, it arises from the circumstance that this field of inqui-

ry has not been explored, not that, if cultivated, it would fail to afford a rich harvest of fruits.

CHAPTERS VII. and VIII. *Theory of Fever. Causes of Fever.*

In these two chapters, the author has treated the subjects to which they relate in an interesting manner; but as our space is limited, we reserve all that is at our disposal, to be occupied by the analysis of a more important chapter, namely, that which is devoted to the treatment of fever, and with which the work closes.

CHAPTER IX. *Treatment of Fever.*

The author sets out by repeating the general principle that febrile inflammation and ordinary inflammation are not identical, and, consequently, require different modes of treatment. Though the febrile inflammation is not the primary affection in fever, so far as regards the order of events, yet, according to Dr. Smith, it is the primary affection, so far as the treatment is concerned. It is against the febrile inflammation, therefore, that the remedies are to be aimed; and though these remedies are the same in kind as for ordinary inflammation, yet they must be applied differently, and varied as to the extent to which they are carried. Before their proper use can be understood, Dr. Smith thinks these questions must be answered:—namely; What is the precise object in view in the treatment of fever? What is it which is most important to do and which is in the power of medical art to accomplish?

Dr. Smith thinks it is impossible to cut a fever short by a stroke of art, and views the attempt as dangerous. It may be moderated, it may be gradually subdued, and from being violent and dangerous, it might be rendered mild and safe; and this is all that can be accomplished.

Since different fevers only differ in their intensity, the author considers remedies under the two heads; 1st. Of those appropriate to the disease considered generally; and 2ndly, Of those required by its different degrees of intensity.

Dr. Smith is of the opinion that the common continued fever of Britain requires but little treatment. "Confinement to bed; the abstraction of stimuli; fever diet; a calomel purgative at night, consisting of one or two grains of calomel with

six or ten of rhubarb, followed in the morning with half an ounce of castor oil; and these remedies repeated every day, or every alternate day, constitute the whole treatment which is required."

Whenever the fever passes beyond the mildest form, it becomes a serious disease. Unless the proper remedies are applied early and vigorously, there is no security that the disease will not pass into the severer form, and destroy the patient. This severer form consists in the setting up, in the organs included in the febrile circle, of inflammation which progressively becomes more intense, unless arrested by the timely interference of art. What is to be done is clear, namely, to remove the inflammation; and though this object being attained, will not cure the fever at once, it will enable it to proceed mildly and safely to its termination.

What then is the proper remedy to prevent the transition of excitement into inflammation? Dr. Smith answers this question in a single word—Bleeding. As he considers the febrile inflammation to be the inevitable consequence of the febrile excitement, he conceives it to be the height of folly to wait till that inflammation has formed. By doing so, we lose precious time, during which the disease is acquiring activity. Such an absurd course, the author compares to what a fireman's conduct would be, if he remained inactive before a building on fire, so long as the fire continued smouldering, reserving his exertions for the moment, when the flames had so far progressed as to burst from every door and window.

The author is of opinion that bleeding cannot be performed too early in fever. He thinks that the earliest moment is the best, as well because it makes the greatest impression on the disease, as because it weakens the patient least when done at that time. But we will let him speak in his own words:—

"When inflammation has actually come on, there is then not a moment to be lost; that inflammation must be stopped. The accomplishment of this object is the great end which the practitioner should aim at in every thing he attempts; until he has done this, he has done nothing; until he has done this he ought to give neither sleep to his eyes, nor slumber to his eyelids; until he has done this, he ought to feel that there should be no rest for himself, because there is no safety for his patient. Until the inflammation is subdued, blood must be ta-

ken; be the quantity it may be necessary to abstract, in order to accomplish this object, what it may; be the bleedings it may be requisite to repeat, what they may; the vein must be allowed to flow, and it must be opened again and again until this object is secured. If this golden opportunity be allowed to escape, and this object be not attained, the risk is most imminent. During this early period, the physician is master over the disease; if he allow it to pass away without obtaining the victory, the disease becomes master over the physician. From that moment his control over it is gone. Never can he regain his lost advantage. Fever is a process that advances with a step as steady as time, and like time it never retraces a step. At a subsequent period its progress may be sometimes retarded, and now and then it may be weakened; but, after the lapse of a few days, this is all which the most complete success is then capable of accomplishing." p. 394.

"The abstraction of blood must be carried to the extent of subduing the inflammation: there is no other limit to the quantity to be taken, but that which is adequate to subdue the inflammation. To attempt to measure the quantity by drachms or ounces is wholly vain; because, if the remedy be properly employed, the quantity will vary in every individual case. To take an ounce more than the subdual of the inflammation requires is injurious; to take an ounce less is still more pernicious; to take the quantity necessary to accomplish the object, and no more, is to use the lancet—that powerful instrument, so dangerous in rash hands, and no less dangerous in weak—with the discernment and decision of a master. He who with a knowledge which gives and which justifies boldness and decision, is able thus to employ this great remedy, is a skilful physician, who has derived from study and experience the best fruit they can yield: he who has not reached this perfection of his art,—(and who among us can pretend to the attainment?) must still go on to observe and to learn." p. 395.

The reader perceives from these extracts, that the author is disposed to use bleeding in fever with no sparing hand. Where the truth may lie with reference to the proper use of this remedy, it is difficult to determine. Whatever else may be uncertain respecting this point, physicians may be considered as pretty unanimous, that whatever bloodletting must be done in fever, ought, as a general rule, to be done early. Here we certainly agree with the author. Many difficulties, however, surround the inquiry as to the propriety and amount of venesection in fever. Suppose a man gifted with omniscience were to know that a certain patient to be cured of fever must be bled

six times. Suppose his physician bleeds him three times, and the disease proves fatal; it is ten to one that the by-standers as well as the physician himself will conclude that death was produced by too free depletion, whereas, on the contrary, it was the consequence of the want of it. Again, a physician is often placed in the following situation. He is in doubt whether bleeding ought to be practised, and he reasons thus:—If I bleed and the patient die, it will be said I have killed him by the bleeding; but if I do not bleed and the patient die, no one will infer that the fatal issue was for want of a bleeding. Thus it is, that, in some cases, by attributing effects to an imagined excess in the use of a remedy, which really belong to its inadequate employment; and in others by listening to the suggestions of timidity, we deceive ourselves, and endanger the lives of our patients.

The author deserves much credit for the able manner in which he has, in different parts of his treatise, determined the true value of the word debility, as applicable to fevers. The patient will often tell his physician that he is weak, the expression merely meaning that he is muscularly weak. But is this condition of the nervous and muscular system, decisive as to the state of the bloodvessels? We think not; for their action may be great when that of the muscles is very small. Indeed the muscular debility may depend upon the over excitement in the bloodvessels, and be relieved by the abstraction of blood.

When we reflect on several circumstances; such as the quantity of blood in the healthy human system, (estimated on an average at twenty-five pounds,) and the large quantity of blood lost by certain accidents and diseases without danger or injury, we may be disposed to admit that bloodletting at the onset of fever is used with too sparing a hand. Among the robust, and on the first attack of fever, the tolerance by the system (so to speak) of bloodletting is at least as great as in the healthy subject; and while by the abstraction of blood we use a remedy, confessedly potent in the subdual of excitement, not to say inflammation, we are gaining a mechanical advantage by disembarrassing the system of part of its fluids, too redundant to be safely circulated during the tumult of disease. To use the expressive simile of Rush, the ship of life is in

danger, and it is best and safest to throw some of the cargo overboard to make her ride out the storm.

Dr. Smith contends, that to combat the London fevers, the quantity of blood necessary to be abstracted is not large. The principle of practice which he adopts, namely, early and prompt depletion, so far from calling for frequent and large bleedings, has, on the contrary, the effect, according to him, of saving the blood of the patient by taking the due quantity at the proper time.

Speaking of the difference between febrile and pure inflammation, the author expresses himself thus:—

"Smaller bleedings will subdue febrile than pure inflammation. Febrile inflammation is a modified inflammation, the modification consisting in less activity in the vascular system and greater depression in the nervous. Whence a moderate bleeding will make an impression on febrile inflammation, which can be equalled by [upon] pure inflammation only by a large bleeding. He who takes away sixteen ounces of blood in fever adopts a bolder and more decisive practice, and brings more effectual relief to his patient, than he who abstracts thirty ounces of blood in some other form of inflammation; and he who takes away six ounces of blood in one febrile case, does more than he who takes away sixteen in another. But the question never can be whether the bleeding should be small or large: that is nothing. The thing to be considered is the condition of the organs, the state of the system; not the ounces of blood to be taken, nor the number of periods at which it is to be removed. Abstract blood to the subdual of the inflammation—that is the rule; abstract blood at the very commencement of the inflammatory action; if you are in time to do it, at the very commencement of the febrile excitement. Then little blood will be lost, and the patient will be safe." p. 396.

The following extract will give the reader an insight into the details of Dr. Smith's practice in the common fever of London.

"If, after the abstraction of sixteen ounces of blood at the commencement of the attack, the vascular excitement be not completely subdued, in the course of three or four hours the same quantity must be again taken; and if, the next morning, that excitement continue, it will probably have already passed into inflammation; and, therefore, the vein must be once more opened, and the blood allowed to flow until the pain, wherever seated, be entirely removed. To check the disease, instead of subduing it, does not in the least diminish its future strength, and, by weakening the powers of life, it even hastens the period of mortality. Nothing is more common than the appearance

of typhoid symptoms, on the second or third day after bleeding has done nothing but lessen the inflammatory action; whereas, had it been carried somewhat, and generally only a little, further, the patient would have been convalescent at the very period when his danger becomes most imminent. In cases where general bleeding produces a decided impression on the inflammation, but does not stop it, cupping, or even leeches, will often complete what the lancet commenced.

"A due impression having been made upon the inflammation by bleeding, the subsequent treatment should consist of purgative medicines, given to the extent of producing three, or at most four stools in twenty-four hours: beyond that number no advantage is obtained by purging; more frequent evacuations, indeed, weaken the patient, but not the disease. The best purgatives consist of one or two grains of calomel, with six or eight of rhubarb, repeated every night, or every other night, and followed the next morning by two drachms, or half an ounce of castor oil, or by the common senna draught. Cold sponging, if the skin be hot; acidulated drink, if there be thirst; perfect quiet, a dark room, a silent nurse, affording prompt attendance, with a noiseless step, a cheerful countenance, and no words—this, together with three tea-cups full of thin arrow-root or gruel, in the twenty-four hours, given in divided portions, at intervals of about two or three hours, comprises all else that will be required, or that will be useful, until the period of convalescence." p. 398 et seq.

One point of great difficulty is touched on in this extract, namely, the appearance of typhoid symptoms in the course of fever, and their cause. If, during the course of depletion, these symptoms should arise, most practitioners consider it as a signal to desist from the further use of debilitating remedies. How strange would it be, therefore, if Dr. Smith should prove to be right in supposing that these symptoms are produced not from the depletion being carried too far, but because it has not been carried far enough. This question is one which should engage the anxious consideration of every practitioner. For ourselves we may say, with reference to a kindred point, that we believe that we have seen typhoid symptoms induced by the premature and too urgent administration of stimuli; and we can easily conceive it possible to have them produced by stopping depletion too soon.

We have felt inclined to smile at observing how strangely Dr. Smith has collocated his remedies as given in the last extract. After enumerating cold sponging, acidulated drink, quiet, a dark

room, a silent nurse, with her cheerful countenance and no words, (the latter remedy not easy to be obtained at any price,) he then goes on to say—"this, together with three tea-cups full of thin arrow-root, &c."

Dr. Smith treats certain remedies in fever in rather a cavalier manner, and seems to disdain to notice them in his text. Thus, he says in a note that "it would be trifling, while treating of so momentous a subject as the proper management of fever, which requires the prompt, vigorous, and yet cautious exhibition of the most powerful remedies, to spend any time in discussing the merits of saline, refrigerant, diaphoretic, antimonial medicines, and the rest of the apparatus, which unfortunately continues to hold the place of direct, honourable, and well-earned (if any thing can be well-earned) remuneration of the practitioner." We would ask, why would it be trifling to notice these remedies? May not some of them be even justified on the pathological principles, which the author has himself laid down. He gives calomel and rhubarb in doses which may suit the London fever, but which would be trifling if employed in most of the fevers of the United States. Why are saline remedies objected to? Is it because they are too weak or too powerful; or are they inapplicable to fever? For our parts, we think that many of the saline aperients deplete without irritating, and cool the system in an evident manner. The common senna draught, recommended by the author, is much more irritating than a dose of sulphate of magnesia. Again, we would ask, on what principle are diaphoretics to be objected to? Nature often depletes to a certain extent by the skin, and sometimes with relief. The natural solution of the fever in intermittents is by sweat; and independently of the depletion which it effects, it is refrigerant on the same principle that cold sponging is refrigerant, namely, by the evaporation which is constantly going on from a perspiring surface. With respect to antimony, long experience has shown that it has power to lessen arterial action, and why should the antimonial medicines be discarded? So far as the remedies enumerated by Dr. Smith may be connected in England with the reprehensible practice of giving them in complicated formulæ, and to an inordinate extent, as the only means possessed by the practising apothecary to run up a bill, as he charges nothing for his advice, we object to

their employment in so unjustifiable a manner; but here evidently our objection is to the abuse, not the use, of the remedies in question.

Having given an outline of his treatment of the common fever of London, the author goes on to speak of the circumstances under which it is often allowed to become formidable. The symptoms being mild at first, the practitioner is deterred from using a remedy esteemed so violent as bloodletting. He asks, why should blood be drawn? "no symptom is prominent, no symptom is urgent."

It is from this kind of temporizing, inefficient treatment, that the author thinks that typhoid, or adynamic symptoms often have their origin. The disease is allowed to take its course, and the product of every fever, at some point of its progress, is adynamia. Having stood by while the disease was advancing, doing next to nothing to arrest its course, the practitioner now perceives that the disease is severe, and perhaps resorts to the lancet. "But the bleeding relieves no symptom; it increases some; the progress of the inflammation is not checked; the adynamic symptoms are fully developed; the patient is more prostrate, and the fever in all respects of a worse character. The inference is, that bleeding is a most inefficient and dangerous remedy in fever; and this inference is deduced from experience; those who draw the conclusion, judge from what they see; they disclaim reason; they pretend only to understand and to respect the lessons of experience."

In this way, by resorting to bleeding when it is too late, the remedy gets a character for being dangerous; whereas, it is only the too tardy resort to it that is dangerous. In this aggravated stage of the disease, the author asks, of what avail can bleeding be? "The blood is no longer in its vessels; it is beneath the membranes, or in the ventricles, or at the base of the brain; the inflamed capillaries have done their work upon the cerebral substance, and upon its membranes; and have left proof enough of their activity, in the thickening of the one, and the softening or the induration of the other. What can bloodletting do in this state of the organ? what can shaving the head and applying cold do? what can blisters do? what can purgatives do? and above all, what can wine do? Nothing can be done; at least, nothing effectually or certainly."

Dr. Smith next speaks of a middle state of things, when bloodletting has not been used in the beginning, and yet where the disease has not made an irretrievable progress, as evinced by the continuance of pain and sensibility, and by a state of pulse, not very quick, and weak. Here the author believes, that in many cases, the loss of a few ounces of blood may stop the inflammation; but he concedes that it requires the nicest medical discrimination to determine, when a resort to bleeding, under such circumstances, is admissible; and asserts, that if the remedy should not arrest the inflammatory action, it precipitates the fatal issue. Well may a practitioner, at such a crisis of disease, shrink from the employment of a remedy, beset with such difficulties in its application, as are here described by the author.

But instead of bleeding, stimuli may be necessary. Thus, says Dr. Smith, the change of structure consequent to inflammation may not be so great as to be incompatible with life; and the inflammatory excitement may have so far exhausted the powers of life, as to make artificial stimulus absolutely necessary. Here the vascular action is weak, and there appears to be a want of a due supply of arterial blood to the brain. Of all stimuli, the author prefers wine or brandy. He recommends, in doubtful cases, to administer a few ounces of wine, as a test of its propriety. If the restlessness, heat, and delirium increase, or if, after some hours, no effect is produced, the remedy will seldom be of the least service. When capable of doing good, the improvement, if not sudden and striking, is manifest in a few hours. "If the pulse become firmer, and especially slower, the tremor slighter, the delirium milder, the sleep sounder, the skin cooler, and above all, if the sensibility increase, and the strength improve, it is then the anchor of hope." The author then adds a good rule, that as soon as excitement is reproduced, the stimulus should be withdrawn:

The following paragraph contains important precepts, and as it does not admit of being condensed, we give it entire.

"No certain indication for the administration of wine can be drawn from one or two symptoms alone; neither from the state of the pulse, nor of the skin, nor of the tongue; neither from the tremor, nor from the delirium. There is an aspect about the patient, an expression not in his countenance only, but in his attitude, in the manner in which he lies and moves, being,

in fact, the general result, as well as the outward expression of the collective internal diseased states, that tell to the experienced eye, when it is probable that a stimulus will be useful. Depression, loss of energy in the vascular system, as well as in the nervous and the sensorial, indicated by a feeble, quick, and easily compressed pulse, no less than by general prostration, afford the most certain indications that the exhibition of wine will be advantageous: and if the skin be at the same time cool and perspiring, the tongue tremulous, moist, or not very dry, and the delirium consist of low muttering incoherence, these symptoms will afford so many additional reasons to hope that it will prove useful. On the contrary, if the skin be hot, the eye fierce or wild, the delirium loud, noisy, requiring restraint, and the general motions violent, it is as absurd to give wine, as to pour oil upon a half-extinguished fire, with a view of putting out the yet burning embers." p. 404.

Dr. Smith is of opinion that neither wine nor brandy is to be given in large quantities. All the good that they can effect, can be accomplished by moderate quantities of them; and if such quantities are of no use, larger quantities will be of no avail.

On the exhibition of opiates, the author has the following observations:—

"There is a condition of the system in which an opiate puts a stop to a state of exhausting agitation and restlessness, procures tranquil sleep, lessens delirium, and operates most favourably on all the symptoms. This may be when the skin is cool and perspiring; the tongue moist, or not very dry; the delirium low, and the pulse and the patient weak. No kind of opiate in any form in which it can be administered ever proves in the least degree beneficial, whenever the skin is very hot, the tongue very dry, or the general motions and actions of the patient are violent." p. 406.

Dr. Smith speaks next of mercury. In some cases, where the inflammatory action has proceeded unsubdued to the production of change of structure, accompanied probably with copious effusion, especially in cerebral cases, he has seen the patient, as it were, snatched from death by this remedy, where the system could be brought under its influence. Its success, however, is attended with this drawback, that the mind, after recovery, often remains feeble, infirm, and almost fatuous. The best mode, according to the author, of exhibiting the remedy, is to give two grains of calomel with half a grain of opium, every three, four, or six hours.

Having given above a pretty full account of the author's practice in fevers, which being at first mild, become subsequently severe, the next cases spoken of are those which are severe from the commencement. To these, the author considers the general principles of his treatment already detailed to be applicable, with the understanding that the remedies appropriate to meet the severer symptoms, are to be employed vigorously and with the least possible delay. In such cases, the delay of a few hours, if it does not cause the loss of the patient, puts his life in imminent hazard.

As our readers might suppose, Dr. Smith conceives that the varieties of fever, characterized by him as cerebral, thoracic, abdominal, and mixed, require modifications in treatment; and he next considers these modifications. In illustration of the treatment of cerebral cases, he gives the instructive case of Dr. Dill, the resident medical officer of the hospital, in which bloodletting being freely used from the commencement of the attack, was not wholly successful in subduing the pain in the head. Ice was applied to the whole scalp without success. Under these circumstances, the author resorted to what he calls the *cold dash*, which he thus describes:

"It consists of pouring a column of cold water upon the head in a continued stream from a height of from six to ten feet. The mode of applying it is as follows. The patient is seated in a large tub; a table is placed at the side of the tub upon which a man stands, and at as great an elevation as his arms can reach, pours upon the naked head of the patient a steady but continued stream of cold or iced water, from a watering-pot without the rose. The stream is made to fall as nearly as possible upon one and the same spot. At first the elevation must be slight, for the shock is too violent if the stream be poured at once from the highest point." p. 412.

Dr. Smith says there is no degree of burning heat, no intensity of vascular action, and no violence of pain that can resist the continued application of this remedy. Usually in from ten to twenty minutes, the heat disappears, the skin becomes cold, the face pallid, the features shrunk; while the pulse is reduced to a mere thread, and the pain in the head entirely ceases. The cold dash being finished the patient is to be quickly wiped dry and put to bed; and it is to be repeated as often as the symptoms recur. Three or four repetitions will commonly suffice to subdue the most intense cerebral affection.

The author considers the cold dash as incomparably more efficacious in excitement of the brain than even iced lotions. It may be so, but not for the reason he gives, namely, that a fresh current of water, continually falling on the head, must produce a more powerful abstraction of caloric. It is true that such a current is applied, but still a more powerful abstraction of heat is not effected by it from the head, than by water in which ice is dissolving, because such water is always as low in temperature as 32°. The cold dash, no doubt, acts peculiarly, from the mechanical force of the water, and from its continual and renewed application to the whole body, as it descends.

If it were in our power to address a question to the author of the work before us, we would ask, why he administered an emetic as the first remedy in the case of Dr. Dill. It may only be an apparent inconsistency on the part of Dr. Smith; but we are certainly not aware that he has any where in his chapter on the treatment of fever recommended a remedy of this kind.

With regard to the modification of treatment applicable to thoracic cases, the author says,

"Fortunately, there is a remedy nearly as powerful and efficacious in intense thoracic affection, as bloodletting and the cold dash are in the cerebral. In the severe bronchial affection of fever, bloodletting is of little avail. It seems to have scarcely any control over the peculiar affection of the lining membrane of the bronchial tubes, or even over the inflammation of the substance of the lung, which so often accompanies the intense form of thoracic disease. It weakens the patient, without making a decided impression upon the disease. Laënnec states that the pathology of pneumonia could scarcely be learnt under his practice; for that he treated the disease, not by bloodletting, but by tartar emetic: and that all his patients recovered. I thought this one of the exaggerated statements in which medical writers sometimes delight to indulge; but it immediately occurred to me that this remedy might prove exceedingly efficacious in the bronchitis of fever. Its efficacy has surpassed my expectation. It seldom fails, if exhibited with promptitude and decision. The mode in which it is most efficiently administered, is in doses of two grains, dissolved in an ounce of water, and repeated every second, third, fourth, or sixth hour, according to the severity of the case." p. 415.

From the above extract, it would seem that Dr. Smith, in objecting, in a previous part of his treatise, to antimonial med-

icines, must have meant to discountenance their employment in the small doses ordinarily resorted to.

For the treatment of fever, as modified by abdominal affection, the author thinks no remedy has been discovered comparable to bloodletting and the cold dash in the cerebral, and tartar emetic in the thoracic cases. Bloodletting, early and duly employed, may prevent the inflammation of the mucous membrane of the intestines, but after it has formed, large bleedings are inadmissible, and small and repeated bleedings are not as useful as leeches. In severe cases, he thinks the abdomen should be covered with leeches, to be re-applied daily, until the pain and tenderness are gone, or, at least, have become slight. "The abdomen should be covered with a poultice as soon as the leeches fall off. Afterwards, the application of a linen rag, moistened constantly with the oleum terebinthinæ, keeps up the effect produced by the leeches, and, when the affection is slight, may supersede their use altogether."

When the purging is considerable, the author recommends five grains of the hydrargyrum cum cretâ, with five grains of Dover's powder, every night, or every night and morning. If this fail, a stronger opiate or an anodyne enema may be administered. In case of constipation, Dr. Smith is very guarded in the use of opening medicines. He conceives that active and irritating purgatives are highly injurious, and we agree with him on this point; but we were not prepared to expect that one or two drachms of castor oil would be recommended as the proper laxative. The laxative selected is well enough; but certainly, of our cold expressed oil, one or two drachms would not operate on an adult affected with the ordinary fever of this section of the United States. But we must recollect that Dr. Smith is treating of the common fever of London; and perhaps both the disease and the remedy in question may be very different in that metropolis, from what they are in this country.

Where copious discharges of blood alternate with constipation, the author thinks the mildest laxative must be administered with caution. Such a condition of the evacuations, we should think, would indicate ulceration of the intestines; and therefore the caution given is a very proper one. The laxa-

tive here recommended is castor oil, in the dose of a teaspoonful every six hours.

In the treatment of scarlatina, the author contends that bloodletting, cæteris paribus, may be used more freely than in ordinary fever. He is of this opinion, because he views, and we think justly, the inflammation in scarlatina to approach nearer to the nature of pure inflammation, than that which occurs in ordinary fever. After a decided impression has been made by general bleeding, the application of ten or twelve leeches to the throat is considered by the author as a sovereign remedy. "If scarlatina be treated in this manner on the second day, or sometimes even on the third, though it commence with exceedingly severe symptoms, yet the patient will be convalescent in the course of three or four days."

The author closes his treatise with a section on the treatment during convalescence, and an appendix containing tables.

The tables contain various numerical data, not, however, presented in as perspicuous a manner as we could have wished. We have compiled the following table from the numerical results given, in order that our readers may judge of the degree of success attained by the author, in conjunction with his colleague Dr. Tweedie, in the treatment of fever; for after all, this must be the great touchstone of the value of their principles and practice. The table embraces the results of four years.

Years.	Admissions.	Deaths.	Proportion of the deaths to the whole number admitted.
1825	588	104	1 in 5.6
1826	676	110	1 in 6.1
1827	676	86	1 in 7.8
1828	597	81	1 in 7.3
Total for four years.	2537	381	1 in 6.6 (average.)

Here the average result is seen to be one death in about six and a half cases; which does not differ, perhaps, from the ordinary results of practitioners, who treat fever on very different principles. But when we advert to the character of the patients received in the London fever hospital, being from the lower orders of society, and about one-third of these actually destitute, and also to the fact, that many were seen for the first time at late periods of the disease, it may be just to concede

that the practice pursued has been attended with encouraging success.

We have been looking into the tabular results to see whether there were any facts in support of the doctrine of critical days. If we confine our view to the number of cases lost or cured on each day up to the seventeenth inclusive, it will be found that most deaths and cures occurred on the eleventh day. Now the eleventh is one of the critical days. The next greatest number of deaths occurred on the fourteenth, which is also a critical day. So far it would seem as if some little support was given to the doctrine.

It can hardly be necessary, in concluding our article, to say what is our opinion of Dr. Smith's book. Our readers can readily infer our sentiments from the large space which we have allotted to its analysis. It is truly a philosophical treatise, the performance of an accurate, patient, and industrious observer and thinker.

Art. VIII.—COMBE ON MENTAL DERANGEMENT.

Observations on Mental Derangement: being an Application of the principles of Phrenology to the elucidation of the causes, symptoms, nature, and treatment of Insanity. By Andrew Combe, M. D. *Edinburgh and London,* 1831.

Having in two consecutive numbers of this journal, (Vol. VIII.,) when reviewing Dr. Burrows' Commentaries on Insanity, entered into a detailed investigation of the nature of the disease and of the various stimulations to which the brain is subjected, and by which its functions are impeded and disturbed, we shall proceed at once to lay before our readers the somewhat peculiar basis on which the arguments and deductions of Dr. Combe rest in the work before us. In the articles just referred to we took occasion to complain of the vagueness of view

entertained by Dr. Burrows, when he spoke of the aberrations of mind, and of the slighting and erroneous notices which he gave of phrenology, as furnishing a key to a knowledge of insanity and its numerous varieties. We adverted at that time to the work of Dr. Spurzheim on Insanity, as an attempt to show the manner in which this subject should be treated in connexion with, and directly deducible from, the phrenological system. The American editor of Mr. George Combe's Essays on Phrenology, published in this city, in an additional article to the work, partially carried out also the same views with a similar object. We have now the satisfaction of directing our readers to a more complete and extended series of 'observations' constituting the work by Dr. Combe.

It will not be amiss if we premise for the benefit of those who have not paid much attention to the modern views of the physiology of the brain, a short account of the data on which the phrenological system rests—that system which is the guide to Dr. Combe.

That the brain is the material instrument of thought, the seat of intellect and sentiment, is, we believe, at this time, a familiar proposition; but it is not perhaps so generally known that it is rather a congeries of organs than a single organ, and that each of the congeries has its separate and peculiar function, which gives the faculty of the mind. The plurality of the mental faculties, their unequal power, their diversity in different individuals, were facts often alluded to and at times more explicitly admitted by moral philosophers. The history of genius could be no otherwise explained than by an admission of this nature. In it we see a strong predominant faculty eager and intent on the gratification and display of its powers, without reference to remote results of profit or honour—while at the same time this wonderful energy is often marked by weakness of other faculties—a deficiency of those qualities of the mind largely participated in by other persons. Education exhibits farther confirmation of this principle, in the great difference of attainments by persons possessing equal opportunities for learning—and in the unequal success, in the same individual, with which several mental faculties are cultivated—although equal appliances were made to all. Several young persons, for example, shall take lessons in music, and all be ambi-

tious of success—and yet the advancement of one will be exceedingly rapid; of another very moderate, while a third makes no progress at all. Let drawing be the subject of study, and the facility of attainment may be the very reverse of that exhibited in the case of music. We meet with individuals remarkable for their power of verbal memory—ability to rehearse with very little trouble after a few readings of or hearing the longest discourse; but who are utterly unfitted to feel or appreciate its peculiar excellencies, or to reason on the philosophy or bearing of the topics advanced in it. Others again destitute of this faculty, or possessing it in a very limited degree, and deficient in all copiousness of elocution, will often astonish us by the depth and cogency of their reasoning, and the great felicity and variety of analogical illustration. We find a distinguished geometrician, without any poetical imagination or ability to carry out in ratiocinative series a problem in moral or ethical philosophy. The poet again is often an exceedingly indifferent observer of things and judge of mankind. Now these various marked differences of mental manifestations among men are not dependent upon accident, education, or both combined, in what is called the force of circumstances: they are the result of primary or innate aptitudes for particular pursuits in preference to others. No possible combination of circumstances can create a faculty—they can at most only modify it.

If the intellects of men are thus various, the difference in their disposition is not less so. Nor are we less struck with the little correspondence between any purely intellectual faculty or combination of such faculties and a particular sentiment or disposition. Genius is allied to the greatest goodness in one man, and to a thousand crimes in another. We deduce from this and other similar facts the consequence, that the manifestations of disposition, in a feeling of benevolence, veneration, friendship, &c. or of cruelty, deceit, &c. are independent of those other modifications of mind constituting intellect. The greatest share of learning and attainments of the most varied and surprising kind, give no active impulse to deeds of charity and philanthropy. Devotion in a good cause, sacrifices for parents, home, country, religion, are the result of strong internal impulses, not of conviction by elaborate processes of reasoning and skilful logic. The mode of display may be affected by the

intelligence of the person—but the strong, active impulse to a particular train of feeling and corresponding action is innate, strengthened but not given by the schools.

Seeing that the brain, in its totality, is the material instrument for the performance of the mental faculties in their totality, and that these latter are numerous and diversified in their nature, intensity of action and aptitude for cultivation, we naturally ask whether particular portions of the brain are not necessary for the manifestations of particular faculties. Having satisfied ourselves by observation of human nature that there is a plurality of faculties of the mind, we should *à priori* infer plurality of organs, or portions for specific functions of the brain. The same cerebral mass, supposing it for a moment a unit, could not be competent to perform opposite functions—an excitement of the former as a whole must be attended with augmented action of all the latter, and its repose be accompanied by a suspension of these. Thus if the faculty for music were to depend upon the entire brain, the manifestation of the former would necessarily involve the active state of the latter. Of course all the other faculties possessed by the individual must be manifested at the moment of the musical effort with equal intensity, which we know is not the case. So far we might proceed in our reasonings and inductions by merely contemplating mental phenomena and the actions of men; but the direct material proof of the soundness of the doctrine would still be wanting. The general truth had been long felt and its importance acknowledged; but the world was without that specification of cerebral structure and minute observation of mental function by which the direct palpable origin of the latter could be referred to the former.

The merit of original observation and direct legitimate induction in this branch of physiology belongs to the late Dr. Gall. When yet at school he was struck with the great differences in the capacities of his companions: he saw one at the head of his class owing to his extremely tenacious memory; while he (Gall) was conscious that he better understood the subject of the lesson, but having a weaker memory could not with all his efforts appear to the same advantage in recitations as his companion. Being somewhat curious in the study of physiognomy, he set about observing the peculiarity of feature by

which his rival of strong memory was distinguished. Gall found this youth to have unusually prominent eyes; and on looking around in the school and among his companions, he discovered that those who were remarkable for their facility in recitation, had also this same peculiarity. But when he afterwards had occasion to note, in the case of another of his companions, a strong and ready memory of places, but without this person having the full and prominent eye, he modified the inference which he had at first drawn regarding this character of eye as indicative of a retentive memory in general; he found that it was but of words in one's own or other languages, and did not by any means indicate a memory for places. The latter was evinced by a prominence at the lower part of the forehead just above the root of the nose. This discovery led him to see that mere physiognomy as commonly understood, that is, signs of intellect and disposition in the features of the face, could no longer guide him in his investigations. Other facts gradually taught him that the variations in external configuration corresponding with mental peculiarities, were of the skull and not of the bones of the face. Become a student of medicine and an anatomist, and made acquainted with the moulding of the skull on the brain and of the general functions of the latter, Gall now continued his observations with a view of detecting the correspondence between cerebral developement and the activity of mental manifestation. "Being physician to a Lunatic Asylum in Vienna, he had opportunities of which he availed himself of making observations on the insane. He visited prisons and resorted to schools, he was introduced to the courts of princes, to colleges, and the seats of justice, and wherever he heard of an individual distinguished in any particular way, either by remarkable endowment or deficiency, he observed and studied the developement of his head. In this manner by an almost imperceptible induction, he conceived himself warranted in believing, that particular mental powers are indicated by particular configurations of the head."* Gall began in 1796 to give courses of private lectures on the new science.

In 1800 Dr. Spurzheim commenced his labours along with Dr. Gall, and in that year assisted for the first time at one of

* Phrenological Transactions.—Edinburgh 1824.

the courses of lectures of the latter. While to Gall must be awarded the merit of originality, we cannot fail to admit that much of the philosophical character of the new system is due to the discriminative judgment of Spurzheim.

Without at this time entering into details which would lead us away from the main subject, it is sufficient to remark that the progress of physiological enquiry of late years has singularly confirmed the leading positions of the two German reformers. By comparative anatomy we learn that the difference in the brains of animals is correspondent with the difference in their instincts and propensities, and that the measure of the superiority of one class over another in regard to intelligence is found in the greater development of their brains upwards and forwards, that is, in the usual order of development from the medulla oblongata. By a comparison of idiots with intelligent persons, and by comparing these latter with each other and observing the correspondence between particular aptitudes and dispositions, and size and configuration of the brain as measured externally by the skull, physiologists are now generally agreed that in proportion to the fulness of the anterior part of the cerebral convolutions will be the manifestation of intellect, while a large growth of the back part and behind the ears indicates the strength of certain propensities of a more animal nature. To these two grander features and divisions we may add a third, which consists in the fulness of the upper region of the brain under the sagittal suture and beneath the parietals, and which is associated with an endowment of sentiments of benevolence, veneration, hope, firmness of purpose, cautiousness of character, &c.*

"The phrenologists consider man by himself, and also compare him with other animals. When the lower animals manifest the same propensities and feelings as those displayed by man, the faculties which produce them are held to be common

* The reader, who is not conversant with the outlines of the Phrenological system, and of the location of the different organs, may soon obtain this kind of information by reference to the Elements of Phrenology, by George Combe, republished in this city by E. Littell. It is illustrated with diagrams of the human head on which is marked the numbers of the organs. Mr. Baker has also for sale the bust, or head in plaster, on which are more distinctly exhibited the various organs.

to both. A faculty is admitted as primitive: 1. Which exists in one kind of animal, and not in another; 2. Which varies in the two sexes of the same species; 3. Which is not proportionate to the other faculties of the same individual; 4. Which does not manifest itself simultaneously with the other faculties; that is, which appears and disappears earlier or later in life than other faculties; 5. Which may act singly; 6. Which is propagated in a distinct manner from parents to children; and 7. Which may singly preserve its proper state of health or disease."

Carrying on their observations agreeably to these rules, phrenologists have arrived at the following conclusion:—The mental faculties are divided into two orders—of the *Feelings*, and the *Intellect*. The first are divided into two genera—1. *Propensities*. 2. *Sentiments*. The intellectual faculties are also divided into two genera—the *knowing*, and the *reflecting*. Each faculty has its material instrument or organ in the brain. The propensities do not form ideas; their sole function is to produce a feeling of a specific kind. These faculties are common to man and animals. They are—*Amativeness*, or propensity to physical love and sexual intercourse;—*philoprogenitiveness*, which produces the instinctive love of offspring in general;—*concentrativeness*, by which the mind maintains two or more powers in simultaneous or combined action, and determines the individual to fixedness of location and purpose;—*adhesiveness*, producing the instinctive tendency to attach one's self to surrounding objects, animate and inanimate—it disposes to friendship and society—it is stronger and the organ larger in women than in men;—*combativeness* produces active courage, and when energetic, the propensity to attack;—*destructiveness* produces the impulse, attended with desire, to destroy in general; when energetic, it gives a keen and impatient tone to the mind, and adds activity and force to the whole character: anger and rage are manifestations of it;—*constructiveness*, in man, inspires with the tendency to construct in general, and the particular direction in which it is exerted depends on the other predominant faculties of the individual:—in the lower animals, it appears to be directed, in a great measure, to one special object; in the bird to a particular form of nest, in the beaver to the special fashion of a hut,—these animals being deficient in the generalizing and directing powers

conferred on man;—*acquisitiveness*, a faculty which produces the tendency to acquire, and the desire to possess in general, without reference to the uses to which the objects, when attained, may be applied—the idea of property is founded on it: avarice is the result of its predominating energy;—*secretiveness*, produces the instinctive tendency to conceal the thoughts, desires, and emotions of the mind, and to suppress their manifestations, till the understanding shall have decided on their propriety and probable consequences,—it thus enables the individual possessing it to add slyness, cunning or prudence to other means of defence.

The *Sentiments* or second genus of the *Feelings*, do not, any more than the propensities, form specific ideas—but are merely emotions of a certain kind, or tendencies to emotion. Several of them are common to man and the lower animals; others are peculiar to man. Those of the first variety are,—*self-esteem*, a name expressive of the nature of the faculty: its deficiency is attended with a want of confidence, and of a proper estimate of what is due to one's self: it is only when indulged in without restraint, and possessed in an inordinate degree, that it produces abuses, and displays itself in the shape of repulsive pride, wilfulness, arrogance, egotism; and makes up an ingredient in envy;—*love of approbation*, producing the love of the esteem of others in praise or approbation—a due endowment of it is indispensable to an amiable character; it may degenerate into puerile vanity, and feigned professions of respect and friendship; the organ is generally larger in women than in men;—*cautiousness*, produces the emotion of fear in general, and prompts its possessor to take care—the tendency of it is to make the individual in whom it is strong, hesitate before he acts, and, from apprehending danger, to trace consequences, that he may be assured of his safety;—*benevolence*, produces the desire of the happiness of others, and disposes to compassion and active benevolence—it communicates mildness and cheerfulness to the temper, and disposes to compassion, and active desire to benefit our species, and to view charitably the actions and character of others.

Of the sentiments proper to man, we meet, first, with *veneration*, which produces the sentiment of respect and reverence, and when directed to the Supreme Being, leads to adoration; it predisposes to religious feeling without determining the

manner in which it ought to be directed, and contributes to our regard for antiquity, and our seniors;—*hope*, inspires with gay, fascinating, and delightful emotions, painting futurity fair and smiling as the regions of primeval bliss; it gilds and adorns every prospect with shades of enchanting excellence, while cautiousness hangs clouds and mists over distant objects, seen by the mind's eye;—*ideality* produces the feeling of exquisiteness and perfectibility, and delight in the 'beau ideal:' it is this faculty which inspires with exaggeration and enthusiasm, which prompts to embellishment and splendid conceptions. It is essential to the poet, orator, painter, and sculptor, and to all who cultivate the fine arts;—*wonder*, the sentiment of the marvellous, or *marvellousness*, a proneness to believe in mysterious incidents, tales of sorcery and witchcraft, &c;—*conscientiousness*, a faculty which produces the feeling of obligation, incumbency, right and wrong—justice is the result of this sentiment, acting in combination with the intellectual powers;—*firmness* produces determination, constancy, and perseverance: fortitude as distinguished from active courage, results from it;—it gives perseverance in the exercise and manifestations of the other faculties;—in excess it causes obstinacy. The first genus of the intellectual faculties, take cognizance of the existence and qualities of external objects, and form ideas: and correspond in some measure to the perceptive powers of the metaphysicians. These faculties are *individuality*, or as more recently termed *eventuality*, which gives the desire, accompanied with the ability, to know facts and things, without determining the kind of knowledge, and without any view to the purposes for which it may be subservient. *Form*, aids the mineralogist, portrait painter, and all persons engaged in the imitative arts;—it gives the power of distinguishing faces. *Size*, gives an intuitive facility in estimating the magnitudes of objects and of perceiving and judging of perspective. *Weight*, or *resistance*. *Colouring* gives a great natural power of perceiving colours, their shades, harmony, and discord; but the reflecting faculties adapt them to the purposes of painting. *Locality*, a faculty by which places once seen are well remembered and readily recognized; it conduces to the desire for travelling, and constitutes a chief element in the talent for topography, geography, astronomy, and landscape painting;—

it gives what is called *coup d'œil*, and judgment of the capabilities of ground. *Order* gives method in arranging objects, as they are physically related; but philosophical or logical inferences, the conception of systematising, and the idea of classification, are formed by the reflecting faculties. *Time*—the special faculty seems to be the power of judging of time, and of intervals in general: by giving the perception of measured cadence, it appears to be the chief source of pleasure in dancing; it is essential to music and versification. *Number*, gives the conception of number and its relations—arithmetic, algebra, and logarithms belong to it. *Tune* gives the perception of melody; but this is only one ingredient in a genius for music. *Language* enables us to acquire a knowledge of, and gives us the power of using artificial signs or words: in ordinary conversation, their language flows like a copious stream; in a speech, they pour out torrents. The second genus of the intellectual faculties or the reflecting ones, produce ideas of relation: they minister to the direction and gratification of all the other powers, and constitute what we call reason or reflection. First, *Comparison*, gives the power of perceiving resemblances, similitudes, and analogies; it explains one thing by comparing it with another, but does not discriminate the points on which they differ; and hence those in whom it is predominant, are, in general, more ready and plausible, than sound in their inferences. *Causality* furnishes the ideas of causation, as implying something more than mere juxta-position or sequence, and as forming an invisible bond of connexion between cause and effect: it gives deep penetration, and the perception of logical consequences in argument; the organ is large in persons who possess a natural genius for metaphysics, political economy, or similar sciences. *Wit*, is readily understood, yet difficult to define; it is a primitive faculty. *Imitation*, gives the power of imitation in general, as in mimicry, and when joined with secretiveness, it gives expression to the fine arts; it is indispensable to good actors, as well as to portrait painters, sculptors, and engravers.

The external surface of the skull corresponding with the anterior portion of the cranium, of which the organs giving the intellectual faculties consist, is of the os frontis; of course the intellect has a much smaller proportion of brain than the senti-

ments and propensities, even in the most favourably organized subjects. In many it bears an exceedingly small proportion to these latter, and we can in consequence readily conceive of their proneness to strong and exaggerated emotions, and wrong actions, running on even to insanity.

The above sketch of the phrenological system, though meagre and trite to some of our readers, was thought necessary to be laid before many others, for their correct understanding, or indeed any thing like tolerable appreciation of the merits of the work of Dr. Combe.

The introduction to this work chiefly consists of a history of the author's conversion to the tenets of Gall and Spurzheim, and of the opportunities which he enjoyed at Paris and elsewhere, of seeing them confirmed. Reference is made in it to the works of French physicians, such as of Georget, Falret, and Voisin, on insanity, written in the spirit of the new doctrines—and to the encomiums passed on them by Broussais, Adelon, Londe, Ucelli, and Vimont. Nor in this enumeration of the instances of favour with which they have been received, are the physicians of Philadelphia and Baltimore, and Professor Caldwell, of Transylvania University, forgotten.

The first chapter of Dr. Combe's observations consists of "*General Remarks on the Functions of the Brain and Nervous System*"—and he points out the general sameness of philosophic course pursued by Gall and C. Bell, in their investigations; the one satisfying us of the plurality of cerebral organs and corresponding functions in an apparently homogeneous mass; the other discovering the separate offices of nerves having a common origin, but which show few perceptible differences between them. After his allusion to the physiological proofs of plurality of cerebral organs, he instances pathology as equally abundant in demonstrative proof to the same effect. Partial idiocy,—partial injuries of the brain, which do not affect all the mental faculties,—insanity, affecting only one or two faculties,—cases of apoplexy, followed by loss of memory of names without apparent deficiency in other respects, and the occasional development of new powers by disease, are all at variance with the unity, and in harmony with the plurality, of cerebral organs."

In the second chapter under the head of "*Influence of cere-*

bral size on mental power," Dr. C. lays down the principle maintained by phrenologists, not that organic size is the *only*, but that it is ONE condition, *and a most important one in producing energy of function;* and that hence, "WHERE ALL OTHER CONDITIONS ARE EQUAL, there increase of size will invariably indicate increased intensity of function." This law holds in regard to the most important organs of nutrition—the heart and bloodvessels, the lungs, the liver, kidneys, &c. The same is equally applicable in regard to the nerves or organs of sensation, which in structure and function approximate more closely to the brain. Animals possessed of acute sensation, have the corresponding nerves greatly predominant, over those of motion, while in those of great muscular power the reverse obtains. A specification of the proportion which the activity of each sense bears to the size of its nerve, leads us to the same conclusion. This chapter, from which our limits will not allow of our making extracts, abounds in physiological information of a very interesting nature.

Before we proceed to the third chapter in which the author at once enters on his subject, we shall go back a little to the first, in which some explanation is offered of the part which the basis of the brain performs. "The joint action of that part of the brain which takes cognizance of the impressions made upon the extremities of the nerves being requisite for sensation, or in other words, the brain being truly the seat of sensation, it happens, that if, by any internal cause, such as disease, that part of it which is in correspondence with a nerve be excited in the particular way in which it is acted upon by the natural stimulus from without, the same sensation will arise in the mind as if the external stimulus were actually present, and making its usual impression on the nervous filaments; and a belief of its real existence will accordingly take place, unless the mind be informed by other faculties of the source of the error. Such, accordingly, is the origin of many odd feelings—of the cravings of hunger, without real want of food—of the creepings under the skin—of the voices constantly whispering into the ear—of the deceptions of sight—and of the all-pervading smells and tastes commonly complained of in madness, and sometimes also by persons in sound mind,—the only difference being that the former believe in the existence of

an external cause to excite these sensations; and that the latter perceive their morbid origin, and refuse to obey their impulses."

The heading of the third chapter "*Mental Derangement is always symptomatic of Cerebral Disease,*" indicates the nature of its contents and the general drift of the author's arguments and reasoning. He very properly tells us that mental derangement, "is a disordered state of the functions of the brain, arising from some existing morbid action in that organ, which may or may not involve at the same time the functions and organs of the external senses, but which frequently exists without any such complication, and which must be remedied before the alienation can be removed." A few pages before this, Dr. C. holds the following language, expressive, we believe, of the real state of the case.

"Hitherto a singular and unfortunate distinction, for which there is no real ground, has been made by medical men, as well as by the vulgar, between the morbid derangements of the external and those of the internal faculties of the mind. The organs of external sense having been long known, every disturbance of their functions have been justly ascribed to an affection of their material organs, and the efforts of the physician have been directed to the discovery of the nature of the particular affection then existing; and by this the treatment has always been regulated. But when an internal faculty of feeling or of thinking has been deranged, instead of having followed the same rational course, and ascribed its aberration to an affection of its cerebral organ, we have hitherto generally contented ourselves with the simple but vague affirmation, that the mind was deranged, and have not cared to inquire what was the particular organic cause of the disturbance of function. And yet there is really no greater difference between the external and the internal faculties, as they are called, than between one external sense and another. All are equally powers of the mind, and differ only in having different functions to perform, and in each being connected with an apparatus fitted for its specific function. The mind requires an optic nerve with an external eye to enable it to see, because light is an external existence with which it must be connected; and it requires an internal cerebral organ to feel the sentiment of justice, because justice is not an external quality, but a mental or internal relation. The mind requires an external organ to enable it to hear, because the vibrations of the air are external existences with which it must be connected; and it requires

only an internal organ to feel the sentiment of pity, because pity is not a quality of matter, but simply a mental state or relation. The organs of the five senses are therefore merely parts added to the other cerebral organs, in order to connect the faculties of Colour, Form, Tune, Size, Number, &c. with the external world; and the powers of Seeing, Hearing, Tasting, Touching, and Smelling, are neither more external to nor less intimate parts of the mind itself, than any other power, whether of thought or of feeling; and the well-being of the brain is alike necessary to the exercise of all. If, then, the manifestations of the mental faculties, in a state of health, depend on the healthy condition of their organs, external and internal, and a change in the state of the mind attends even the slightest alteration in that of the brain, it follows that a morbid condition of the organ of mind must be attended with morbid manifestations, or, in other words, with mental derangement, and that, without the previous removal of this organic cause, the mental health can never be re-established."

Dr. Combe shows himself to be of the physiological school of medicine, when he protests against naming the disease after the prominent symptom, without regard to the nature of the organic cause. He criticises with good reason the monstrously learned and artificial division of mental diseases made by the late Dr. Good. Contrasted with the notions of this latter writer, are the following views advanced by Dr. Combe.

"Phrenology has proved, and indeed it is scarely disputed, that the brain is an aggregate of many distinct organs, each manifesting a distinct mental power. It proves that one or more of these organs may be injured or diseased, and their functions impeded or altered, without necessarily affecting the remainder; and thus explains how a man may be insane on one feeling or faculty, and sound on all the rest; and, consequently, how, when a different organ is diseased, the faculty or feeling that is deranged may be different, and the prominent symptoms be different, and yet the disease itself remain exactly of the same nature. Inflammation affecting the eye disturbs *vision*, and, affecting the ear, disturbs *hearing*, because vision is the *function* of the one, and hearing is the *function* of the other; but still it is *inflammation* in both, and requires in both the same kind of treatment. Phrenology shows that, in like manner, morbid excitement of the cerebral organs of Combativeness and Destructiveness may produce raving, violence, and fury; and morbid excitement of the organ of Cautiousness produces fear, apprehension, despondency, and melancholy; not from any difference in the *kind* of excitement, but simply from the function of the one being to manifest the propensities first nam-

ed, and from the function of the other being to manifest feeling of caution; and that hence both cases may require the same medical treatment for their removal, modified only by the difference of function; and, in so far, it affords a simple and consistent explanation of all the various forms which insanity assumes, and leaves us free to observe with care the nature of the organic derangement on which each depends."

The fourth chapter is on the "*predisposing causes of mental derangement.*" Rightly does the author say,

"An examination of the predisposing causes of any disease is necessary to enable us to understand its origin, nature, and treatment, including in the latter the means of its prevention. When accurately known they generally indicate the seat of the malady, as must at once be obvious on recollecting that a predisposition is a *local* condition or weakness of the part in which the morbid action is afterwards excited by the external or occasional cause; and unless the predisposing causes be found out, and removed, or modified, we can neither hope to prevent the accidental accession of the disease, nor expect to bring about a permanent cure."

Of the two kinds of predisposition, *hereditary* and *acquired*, the author speaks with some fulness. On the first he thus expresses himself:

"Authors who differ on every other point, agree in acknowledging that a condition of the brain, rendering it unusually susceptible of those diseases which are attended by mental derangement, is hereditary; and this truth is recognised by the vulgar (often the best judges in matters of observation), who speak of insanity being in the family or in blood; and it is practically acted upon even by Life Assurance Societies, who hold the occurrence of derangement in a family as an obstacle to insuring the life of an individual who is himself perfectly sane. By the hereditary transmission of insanity it is not meant that the actual malady is conveyed from parent to child, and that, after lying latent for some years, it will inevitably appear in the child, in whatever circumstances he may be placed. The meaning is simply, that some quality of brain is communicated to the offspring, rendering them more prone than other people to undergo cerebral disease, and thereby to become insane; and in consequence of which, causes will produce mental derangement in them, which, in any one not so predisposed, would have proved perfectly harmless.

"The testimony of almost universal experience establishes the hereditary transmission of a predisposition to mania as one of the most fruitful sources of that terrible disease. Pinel justly observes, that, when we remark in all places, and in suc-

cessive generations, several members of certain families lapsing into insanity at the same period of life, without any adequate exciting cause, it becomes exceedingly difficult to dispute the influence of hereditary qualities; and it becomes, he adds, altogether impossible, when we know that the fact is incontestibly proved, not only by popular observation, but by notes regularly taken in numerous public and private establishments, and by collections of cases published in France, in England, and in Germany, from which, if required, numerous and conclusive examples might easily be quoted. But it may be sufficient to add, that the predisposition, like all other qualities of body and mind, becomes stronger in proportion to its previous duration and prevalence in the family, so that the disease attacks a greater number of the children where both parents are descended from tainted families, than where either parent is from a pure stock; and seemingly, for this reason, the hereditary predisposition is a more active cause of mental derangement in the higher classes, who intermarry more with each other, than in the lower, who have a wider choice. The prevalence of insanity and of mental imbecility among the royal families of Europe, and of the former among the Quakers, who, from their habitual moderation of passion, and quiet domestic lives, ought otherwise to be unusually exempted from its attacks, is to be ascribed to the same cause of too frequent intermarriage occasioning the wide transmission of hereditary taint. The accuracy of this remark is indeed manifest on comparing the returns from the higher and lower classes of society. In the Salpetrière at Paris, for instance, which is an hospital for paupers, out of 321 female lunatics, only 105 were ascertained to belong to families in which madness already existed; while, out of 264 of the higher classes, 150, or *more than one-half*, were in this predicament. The experience of Dr. Burrows is still more decisive, as he assures us that he clearly ascertained the existence of a hereditary predisposition in six-sevenths of all his patients in private practice. These results deserve every attention on the part of the philanthropic and enlightened physician, through whom alone the public can be made acquainted with the magnitude of the evils resulting from acting in opposition to the principles on which they depend.

The operation of hereditary tendencies is well exhibited in the families of parents who have become insane from accidental causes without any previous predisposition. The children born *prior* to the existence of the disease in the parent remain as safe from its attack as those of parents who have never been affected; while those born *subsequent* to that time, and who may be thus supposed to have inherited the impaired constitution of their progenitor, are observed to be much more liable to its invasion than untainted children. And when madness does

show itself in the offspring, it is generally at the same age and in the same form in which it appeared in the parent."

The causes of acquired predisposition to mental derangement are noticed as follows:

"The second form in which departure from the first condition of cerebral health produces liability to cerebral disease and insanity, is that in which, from an unusual severity of some of the diseases incidental to infancy, injudicious training, confinement to warm and ill-ventilated apartments, over-feeding, too early and too great straining of the mental powers, too ready gratification of all the passions, inclinations, and caprices of youth, and a variety of other similar causes, an unusual susceptibility has been impressed upon the nervous system, laying the foundation for the subsequent occurrence of cerebral and mental affections often from very trifling causes. The predisposition thus produced is by no means unfrequent; but as, when once existing, its mode of action is the same as that of the hereditary tendency, it is unnecessary to discuss it at any length. In youth it is often a chief cause of the appearance of hysteria, epilepsy, or some other form of common nervous disease. But, in mature age, particularly in persons of a peculiar temperament, with proneness to excessive and involuntary excitement of the nervous system, it more frequently leads to mental derangement. It is well known among medical men, that fevers, for example, in which the head has been much affected, wounds of the brain, indulgence in the abuse of wine or spirits, apoplexy, palsy, and a variety of other morbid states, occurring at that period of life, often leave the brain in a condition not of absolute disease, but of extreme susceptibility. Sometimes even a single fit of drunkenness will so far overstimulate cerebral action, as to throw the individual into violent madness of short duration; and it can easily be conceived, that a frequent repetition of the same stimulus, to a smaller extent, may at last produce a permanent state of irritation, which it may require only a slight cause to convert into disease. For the same reason, blows and injuries frequently leave behind them unusual susceptibility of impressions. Spiculæ of bone in the interior of the skull, keeping up a slight but constant irritation, operate in the same way, increase natural action, and are therefore not unfrequent predisposing causes of some form or other of cerebral and mental disease, and particularly of epilepsy and monomania. Certain temperaments also, as already said, predispose more than others to those forms of cerebral disease which are attended by insanity. The purely lymphatic are not often the victims of mental derangement. The sanguine and the nervous, both of whom are endowed with great acuteness and vivacity of feeling, or irritability of nervous fibre, are perhaps the least capable of withstanding the action

of any continued exciting cause. But the subject of temperament is so closely connected with that of hereditary descent, that it is unnecessary to add any thing to what has been already said on the latter in the preceding pages."

Explanatory of one of the material causes of predisposition is a want of duly balanced proportion of all parts of the brain, so that some have an undue predominance over others:

"Wherever an individual possesses a set of faculties in much higher endowment than the rest, those will assume the predominance in activity as well as in energy. If they belong to the department of intellect, there will be intellectual activity, and a delight in their exercise; if they belong to the moral sentiments, there will be a tendency to, and a delight in, moral pursuits; and if they belong to the propensities, there will be a constant recurrence of, and delight in, selfish and debasing gratifications of passion and sensual appetite; accordingly, in society, we find the artist whose pictorial talents are naturally the strongest, seeking his chief delight in their constant exercise, however adverse the circumstances in which he may be placed."

Confirmatory of this view is the experience of Esquirol, who in his work "*On the Passions, considered as causes, &c. of Mental Alienation*," tells us:

"Almost all the insane committed to my care had offered some irregularities in their functions, in their *intellectual faculties, in their affections or feelings*, BEFORE becoming insane, and *that often from their earliest infancy.* Some had been distinguished for "*excessive pride*," (excessive predominance of the organ of Self-esteem); "others for *great irascibility*," (predominance of Combativeness and Destructiveness); "some for frequent *melancholy*," (predominance of Cautiousness); "others for a *ridiculous levity*," (defective Cautiousness, predominant Hope, and Love of Approbation); "some for a *desolating instability* for receiving instruction," (defective Firmness and Intellect); others for an *obstinate application* to whatever they undertook, (predominant Firmness); others again were *peevish, discontented, fearful, timid* and *irresolute*," (excessive predominance of Cautiousness, and defective Combativeness and Firmness). And, as if still more clearly to fix the cerebral seat of insanity, he goes on to say, that "most of them had suffered from nervous diseases—the women from convulsions or hysterical spasms, and the men from cramps, palpitations, or palsy; *with these primitive or acquired dispositions, nothing more was wanting, except some moral affection, to determine the explosion of furious mania, or the deepest melancholy.*"

Dr. Combe informs us that "as illustrations of this principle

Dr. Gall was in the habit of showing the skull of a man in whom the cerebellum was enormously large, and the chief feature of whose alienation was to believe himself to be the husband of six wives; and he also possessed the skull of a woman in whom the organ of Philoprogenitiveness was extremely large, and who in her ravings fancied herself pregnant with five children.

Still farther confirmation is furnished in a visit by Mr. G. Combe the celebrated phrenologist, to the Richmond Lunatic Asylum in Dublin, in April 1829. This gentleman, in the presence of Dr. Crawford, assistant physician, Mr. Grace, the Moral Governor, Major Edgeworth, Governor of the House of Industry, Dr. Cumming, assistant physician, and Dr. Mollan, examined a number of the patients, "and pointed out to these gentlemen the peculiarities of cerebral organization which each presented, and with which he expected the features of the lunacy would, as a general rule, be found to correspond. It was impossible to imagine a more conclusive experiment, for Dr. Crawford had previously written down the characteristic symptoms, and Mr. Combe had never seen or heard of any of the patients before they were ushered into the room, and therefore, as he wrote down his remarks in presence of the above named gentlemen *before* Dr. Crawford's notes were consulted, he of necessity drew his inferences entirely from their cerebral configuration; and yet, although it was the first time Mr. Combe had made the attempt, the results, as will presently be seen, harmonized completely with the principle I have been explaining."

Dr. Combe gives the tabular views of the development of the several organs as observed by Mr. Combe and noted down at the time, and opposite to these the remarks of Dr. Crawford containing the characteristic symptoms.

Contrasted with excessive endowment of the faculties, and excessive development of the organs, is the opposite condition of deficiency in these particulars, "in consequence of which the mental powers are unable to withstand any casual excitement or forced exertion into which they may be thrown. "This, as might be expected, is be to met with most frequently in persons whose deficiencies render them unfit for the stations which they occupy in society, and incapable of the duties committed to their charge. Conscious of incapacity, and yet unwilling to be borne

down without an effort, they live in a continued turmoil and struggle, worried and oppressed by calls which they cannot answer, and cannot escape from, till at last some accident occurs to turn the balance and deprive them of reason. Men of strong ambition, but little talent, who labour and strive incessantly to make some improvement, or effect some discovery, or do something which shall bring them to distinction, and, under this impulse, goad on and tax their limited powers to the uttermost, place their cerebral organization on the brink of disease, and require only a trifling cause to induce mental alienation. So efficient, indeed, is defective developement as a predisposing condition, that, in many cases, idiocy arises from it alone, independent of any actual disease. Numerous examples are given by authors of full grown idiots, with brains no larger than those of infants, and in whom there was no other mark of disease to account for the imbecility. It even happens, that where the anterior lobe of the brain is merely sufficiently developed to raise the individual a little above palpable imbecility, he may pass through boyhood without remark or suspicion of his true state; and yet, on arriving at maturity, when all the faculties ought to be in their vigour, his friends will be surprised to find that the mind is in reality so limited as to be quite oppressed by the ordinary details of business, which, if persevered in, soon upset the little reason originally possessed. This kind of predisposition, however, as will be apparent from its nature, leads more frequently to idiocy and imbecility than to any of the forms of proper mania."

A third important condition of health, the infringement or neglect of which gives birth to a distinct class of predisposing causes, is the regular action of all the organs of the brain. This is conformable with the general laws of exercise.

"Keeping these principles in view, it will excite no surprise to find, that *non-exercise* of the brain and nervous system, or, in other words, inactivity of intellect and of feeling, is a very frequent predisposing cause of insanity, and of every form of nervous disease. For demonstrative evidence of this position, we have only to look at the numerous victims to be found among females of the middle and higher ranks, who have no call to exertion to gain the means of subsistence, and no objects of interest on which to expend and exercise their mental faculties, and who consequently sink into a state of mental sloth and nervous weakness, which not only deprives them of every en-

joyment, but lays them open to suffering, both of mind and body, from the slightest causes.

If we look abroad upon society, we shall find innumerable examples of mental and nervous debility from this cause. When a person of some mental capacity is confined for a length of time to an unvarying round of employment, which affords neither scope nor stimulus for one half of his faculties, and, from want of education or society, has no external resources; his mental powers, for want of exercise to keep up due vitality in their cerebral organs, become blunted; his perceptions slow and dull, and he feels any unusual subjects of thought as disagreeable and painful intrusions. The intellect and feelings not being provided with interests external to themselves, must either become inactive and weak, or work upon themselves and become diseased. In the former case, the mind becomes apathetic, and possesses no ground of sympathy with its fellow creatures; in the latter, it becomes unduly sensitive, and shrinks within itself and its own limited circle, as its only protection against every trifling occurrence or mode of action which has not relation to itself. A desire to continue an unvaried round of life takes strong possession of the mind, because, to come forth into society requires an exertion of faculties which have been long dormant, which cannot awaken without pain, and which are felt to be feeble when called into action. In such a state, home and its immediate interests become not only the centre which they ought to be, but also the boundary of life; and the mind being originally constituted to embrace a much wider sphere, is thus shorn of its powers, deprived of numerous pleasures attending their exercise, the whole tone of mental and bodily health is lowered, and a total inaptitude for the business of life and the ordinary intercourse of society comes on, and often increases till it becomes a positive malady.

But let the situation of such a person be changed; bring him for instance, from the listlessness of retirement to the business and bustle of a town,—give him a variety of imperative employments,—and place him in society, so as to supply to his cerebral organs that extent of exercise which gives them health and vivacity of action,—and, in a few months, the change produced will be surprising. Health, animation, and acuteness, will take the place of former insipidity and dulness. In such an instance it would be absurd to suppose that it is the mind itself which becomes heavy and feeble, and again revives into energy by these changes in external circumstances; the effects arise entirely from changes in the state of the brain; for regular exercise conduces to its greater health and activity, and the mental manifestations and the bodily health have been improved solely by its improved condition."

Excess of mental activity is an infringement of the third condition of health, and as such predisposes to nervous and cerebral diseases.

The *fourth* and last condition, according to Dr. Combe, required for the health of the brain is a due supply of properly oxygenated blood. On so obvious a truth as this we deem it unnecessary to descant.

"Other predisposing causes are generally mentioned, such as age, sex, and profession; but as almost all of them may be resolved into extreme exercise of one or more of the cerebral organs, to the neglect of the rest, it is unnecessary to consider them here, at least in detail. For instance, the middle period of life is more fertile in the production of mental derangement, only because it is then that the brain is in its highest state of activity, and then the mind is most agitated by violent and tumultuous passions. It is then that love, fame, wealth, pride, &c. take possession of the mind, and, by their continued excitement, lead to cerebral disease. The female sex, again, predisposes to insanity, in common with all other diseases of the nervous system; because in the female the feelings are more acute, and external resources are more limited. And a sedentary and literary life predisposes to cerebral affections, and consequently to mania, for the same reason that it keeps the brain in an undue and permanent state of activity, convertible from the slightest cause into a state of morbid excitement."

The fifth chapter is on "exciting or occasional causes of disease." The force of exciting causes of insanity is of course relative, depending mainly on the extent of the hereditary or acquired predisposition to the disease. As pregnant with instruction we cannot however forbear from giving the following extracts as additional illustrations of the horrors of intemperance, the efforts to check which are made a matter of jest by some men who call themselves Christians and moralists, and whom the world regards as learned.

"Another cause of a similar nature may be adverted to, and, for the same reason, its action on the brain is not denied or doubted,—I allude to the abuse of intoxicating liquors. That wine and spirits in unusual quantity derange the mental manifestations, I need hardly stop to state; and this being the case it is easy to conceive that habitual excess may at last induce a permanent irregularity of action in the brain, amounting to disease; and, accordingly, nervous tremors, headachs, fits of excitement, often amounting to mental alienation, and delirium

tremens, are observed to be common consequences of over-indulgence.

The remarkable increase of insanity among the lower orders in Great Britain, particularly in the manufacturing districts, has been pretty accurately traced, partly to the miseries, want, and anxiety, inseparable from the fluctuations to which they are exposed, and partly to the prevalence of dram-drinking, as the only means of relief within their reach. That it is not the mental distress alone which is the cause, is proved by finding the large majority of the patients to be among those who have been the most intemperate. Occasionally, however, it must be admitted, the excessive drinking is only the first symptom, and not the cause of the disease."

The case instanced by Dr. Combe from the Medico-Chirurgical Review, (No. 17, p. 181.) when he speaks of insanity, as caused by inanition and starvation, of a thief who "long accustomed to the abuse of spirits, became insane on being restricted to bread and water, and was cured by the administration of a modicum of brandy," is not coincident with general experience in such cases—nor even should delirium occur is ardent spirit in any form necessary for the cure—darkness and opium will suffice, where evacuations are not demanded.

In respect to the functional class of causes, the following remarks are not without interest :—

"It has been remarked by both Bayle and Broussais, and with much appearance of truth, that, when cerebral disease springs from irritation in remote organs, such as the stomach or liver, the mental delusions resulting from it have a direct relation to the functions of these organs. Bayle gives a number of cases in which inflammation and ulceration of the mucous membrane of the stomach and intestines seem to have preceded the mental affection, and given rise to the dread of poison, to the refusal of food, to melancholy, and even to suicide as the means of escaping from poison, as the features of the hallucination.* Broussais, on the other hand, after laying down as an undeniable principle, that whatever stimulates the brain may become a cause of madness, and calling attention to the fundamental truth, that the brain is placed between two orders of stimuli, those which come to it by the nerves of the external senses, and those which it receives from the nerves of the internal viscera, adds, that, next to local causes, the most influential are irritations proceeding from the stomach, liver, or duodenum. Indeed many persons contract, under the action of an exciting

* Medico-Chirurgical Review, vol. viii. p. 121.

regimen, of poisons, or of irritating medicines, a chronic gastritis, which, after having kept them for some years in a hypochondriacal or nervous state, ends by throwing them into mental alienation. Others lose their reason in a much shorter time from the same cause. If the time is extremely short, and the gastritis acute, the delirium is no longer called *madness;* it then becomes phrenzy, or febrile delirium. But what is very remarkable, is, that frequently the *moral* causes, or those which act most directly upon the brain, only give rise to madness after having first developed and kept up gastric inflammation for some time, as if the encephalon required, in certain subjects, the reaction of the viscera to stimulate it to the necessary degree of irritation. This happens in many melancholics from nostalgia, unrequited love, loss of fortune, mortified pride, &c. who lose their reason only after having long suffered from gastro-enteritis and mental depression. And this ought not to excite surprise, as in many persons, moral emotions, although felt by the brain, produce at the time less effect on the organization of that viscus, than on that of the heart, lungs, or stomach.'*

"The same principle of the brain being the centre of all sensation, and of its being more affected by the exaggerated than by the natural irritation transmitted to it from other organs, explains satisfactorily the production of hydrocephalus, convulsions, epilepsy, and other cerebral disorders by irritation, such as worms in the intestinal canal, by biliary or digestive derangement, or by teething. It is well known, that irritation in the stomach, caused by a surfeit or by dyspepsia, over-stimulates its nerves, and thereby affects the brain so much as to excite headach and incapacity for thinking; and therefore it is not to be wondered at that permanent irritation of the digestive organs should, in persons, strongly predisposed to insanity, often induce one or other of the forms of mental derangement."

The author quotes in this chapter, several instances to show that excitement of the particular phrenological functions does tend to derangement, and that the character of the latter, when produced, bears a distinct relation to the function performed by the organ or organs thus deranged. We regret not being able to give some of these cases, which would, we are sure, excite a marked interest in the minds of our readers.

The chapter on the "symptoms of mental derangement" is long, and abundant in details of much interest. The author

* Broussais, De la Folie, p. 337.

analyses the nature of the symptoms as evidences of the disturbance of a particular faculty, with a care and success unusual in works on Insanity. He removes much of the mysticism and obscurity in which the subject has been needlessly involved by the dreams of spiritualism, and the vague notions of those who could only see in the mind a unit power, on the modifications of which, by education and accidental circumstances, were presumed to depend the differences in the capacity and dispositions of men. Dr. Combe cautions us against regarding any abstract act or feeling as an evidence of insanity. "*It is the prolonged departure without an adequate external cause, from the state of feeling and modes of thinking usual to the individual when in health, that is the true feature of disorder in the mind,* and the degree at which this disorder ought to be held as constituting *insanity*, is a question of another kind, on which we can scarcely hope for unanimity of sentiment and opinion." It is very properly said, that "in judging of a man's sanity, it is consequently as essential to know what his habitual manifestations were as what his present symptoms are."

Qualifying somewhat the entireness of application of the above position is the fact, that mental alienation is sometimes merely an exaggeration, as it were, of the natural qualities of the individual. The author illustrates his meaning in the following manner.

"In treating of disproportionate development of the different parts of the brain, as predisposing to disease, in virtue of the tendency to inordinate action which all unusually developed parts possess, I took occasion to explain physiologically the process by which excessive healthy activity, long kept up and frequently recurring in the same organ, is gradually converted into morbid and involuntary irritation, attended with an exaggeration, both in degree and in duration, of the corresponding function as its characteristic sign; and it is important that the reader should keep the principle in mind, as it admits of very numerous and useful applications. It is from this cause that men of partial genius and unequal endowment of mental qualities, especially if possessed of an irritable constitution, are more prone to insanity than those who are fortunate enough to possess a more harmonious cerebral combination. The result, of course, varies according to the region in which the preponderance exists. If the preponderating organs belong to the anterior lobe, then we have intellectual genius as the mental feature in health, and *intellectual* disorder as the feature in disease. If they belong to the

coronal region, then we have, in the healthy state, a straining after moral and religious excellence, or a *genius for morals*, so to speak, which opens up sources of delight and of feeling, which a less gifted person cannot comprehend; and, in disease, we have, perhaps, religious melancholy, or self-accusation. But if they belong to the basilar and posterior regions, then we have, in health, a vehemence and energy of passion and propensity which are truly formidable, constituting what may be termed a genius for mischief, jealousy, suspicion, violence, dissipation, anger, and all the lower passions; and, in disease, we have all the fury and recklessness of mania. Humiliating as it may be to human pride, we have thus one physiological condition in common, viz. a preponderance in size and activity of a portion of the brain, between the genius of a Newton, the devoted philanthropy of a Howard, and the grovelling ferocity of a Hare or a Bellingham; and Nature having formed the connexion, it becomes our duty, in the spirit of mutual charity and good sense, to open our eyes to its existence—to examine the common relation, in regard to the invasion of mental disease, which it establishes between the different classes of mankind—and not to act as if, by denying its influence, we could annihilate its power."

Doctor Combe passes in review many of the symptoms of insanity which are direct evidences of a highly excited and involved state of particular faculties. As serving to exhibit his views and at the same time the application of phrenology to a knowledge of insanity, we give the following rather long extract.

"The organ of *Amativeness* is established by abundant evidence, and many of the mental symptoms of insanity plainly consist in excitement, diminution, or perversion of its functions. If an individual previously remarkable for correctness of conduct, and moderation of passion, becomes conspicuous for unusual impetuosity of desire, gross obscenity, and contempt of decency; or shows an unwonted and unfounded aversion to the society of the opposite sex; or rushes headlong into the indulgence of morbid and unnatural appetites,—these constitute so many symptoms of an unhealthy condition of mind, all bearing reference to the faculty above named. *Adhesiveness*, which constitutes the bond of social and domestic life, is the fountain of another variety of mental symptoms. From excitement of its function, we see persons who, when in health, were no way remarkable for strong affection, displaying, as features of the insane state, a tenderness of attachment as husbands, a depth of filial devotion as sons, and an extent and disinterestedness of affection as lovers, which have no parallel except in romance, (Pinel.) From perverted and diminished function, we have, on

the other hand, the common symptoms of dislike, aversion, or lukewarm indifference towards those formerly most loved. Pursuing the inquiry, we find in excitement of *Combativeness* the origin of many symptoms, such as the unceasing propensity to provoke, attack, and fight, the vindictive spirit of contradiction for the sake of quarrelling, and the incessant, mischievous activity mentioned by Pinel as characterizing the lunacy of a young man, who was naturally not only *gentle* and *peaceful*, but absolutely *timid*. And, as contrasts to this, we have numerous examples of men of distinguished courage manifesting, during insanity, a degree of timidity amounting to cowardice, both states equally proving the truth of our leading principle, that it is *the departure from the habitual mode of action of the faculty* which constitutes the sign of disease.

What is more common than to witness rage, violence, causeless revenge, a thirst for blood and maniacal fury, all which are symptoms traceable to excited *Destructiveness?* Or what difficulty is there in perceiving the relation of morbid cupidity and thirst for gain, to exalted activity of Acquisitiveness? There are few hospitals, indeed, which do not present one or more patients, whose eager appropriation to self of every thing within their reach, in utter opposition to their former character, is a direct symptom of their derangement. Frequently, however, the desire of property is impaired, and then the patient allows every thing to slip from his possession, but this also is as evidently a symptom of disordered function as the former. In the same light, in regard to the organ and faculty of *Secretiveness*, are to be viewed the unexampled cunning and power of deceit acquired by some patients on becoming insane; while others, naturally shy and reserved, display an openness and a disposition to tattle amounting to foolishness, which equally betoken the presence of disease. The assumption of fictitious dignities and despotic power, so common in the asylums of Europe, constitutes a class of symptoms directly emanating from excited *Self-Esteem*, as do also the deep self-abasement and humiliation arising from its diminished action. *Love of Approbation* is in like manner related to that class of symptoms consisting of inordinate vanity, towering ambition and passion for distinction, as well as that which is occasionally observed, marked by a total and unnatural indifference to public opinion. *Cautiousness* is also the prolific source of many symptoms. In a large proportion of the insane, the existence of the disease shows itself first by unusual depression, melancholy, timidity, suspicion and apprehension. The patient lives in the constant dread of some terrible calamity, or despairs of his present or eternal welfare; while occasionally natural prudence of character is exchanged for headlong rashness and in-

attention. Even *Benevolence* contributes its share of symptoms, and seems to be the source of that generous liberality, sometimes apparent in insanity, which gives away all to others, and reserves nothing for self but the delight of bestowing. That numerous symptoms of insanity spring from disorder of the functions of *Veneration*, *Wonder*, &c., I need not, after the cases recorded, when treating of the exciting causes, stop to prove. Morbid activity of *Hope* and *Ideality* is manifested in those among the insane, who live full of hope and gaiety in an imaginary world, where every thing is bright and beaming with excellence and perfection. Dr. Willis particularly mentions a patient of his who was impatient for the return of the paroxysm, from the happiness or perfect beatitude which it procured him; while it continued, he wrote poetry and prose with equal facility, and nothing in theory or in practice ever stopped him short. This state of feeling was a symptom of disease, and always disappeared with the return of health. Many other authors notice the possession of a powerful poetical imagination during insanity, when during health the opposite was the natural state of the mind. *Conscientiousness* again is often diseased, giving rise as symptoms to feelings of remorse for imaginary crimes; to self-condemnation in all its various forms; and to an unsurmountable scrupulosity in the daily occupation of life; causing a rigidity of adherence to thoughtless promises, which has been occasionally carried so far as to endanger life.

The symptoms arising from affections of the organs of the intellectual faculties are equally obvious. When the knowing organs, including those of Locality, Form, Size, and Colour, are diseased, the lunatics see objects distorted, displaced, and of different colours from what they really possess. Many lunatics, says Esquirol, see the letters lying over upon each other, so that they cannot read; and they mistake their relations for strangers. How many, he continues, mistake the *volume*, the *form*, and the *weight* of the bodies which they touch! The greater part become, in consequence, unfit for any sort of handywork or mechanical employment, and for music and writing. These aberrations, it may be observed, cannot be attributed to the mere external organ of sense, because the eyeball receives the luminous rays, and depicts the image on the retina as clearly and accurately as in health, and it is the mental faculties only that are unable to judge of the qualities of the image. If it was simply from an affection of the eye that the perception of form or of weight was imperfect, then the power of estimating these correctly by the touch ought to remain unimpaired, but the fact is the reverse. When the same faculties are inordinately excited by insanity, then a genius for mechanical pursuits

is developed, which lasts only while the excitement continues, and, on ceasing, leaves the patient dull as before.

The organ of *Number* is sometimes separately diseased. A young Englishman is mentioned*, who had a nervous attack every other day, during which he saw and heard nothing, as was verified by experiment, and who yet occupied himself particularly with mathematics, arithmetic, and logarithms, and solved with ease new and difficult problems; this seems to arise from the organ of Number being active when other mental powers were lost. Generally, however, the power of calculating is diminished. The organ of *Tune* is often found diseased in lunatics, giving rise to very singular manifestations in persons who in health had no musical ear. Dr. Rush, Pinel, Esquirol, and many others, mention this fact. Dr. Rush often visited, with great pleasure, a young woman, on account of her exquisite singing and poetical imagination, although, before the invasion of insanity, she had *never* shewn any talent for music or for poetry. Diseased activity of the organ of *Language* is often met with in a "*babil intarissable*," volubility and fluency of utterance, which are not soon forgotten by the victim on whom they have been inflicted, while at other times words are either misapplied or very sparingly at command.

As to the state of the reflecting faculties in insanity, there is abundant evidence to show that they may be diseased, untouched, or excessively excited, each state giving rise to a diversity of symptoms. They may be suppressed, excited, or deranged. When the reflecting faculties are morbidly excited, it constitutes what Pinel calls Reasoning Insanity, or *Folie Raisonnante*. Foderé, whom no one will suspect of phrenological tendencies, says, "If the imagination offers for the most part nothing but disjointed sentences and extravagant actions, we are sometimes astonished at the elevation of ideas, purity of language, and *force of reasoning*, of some madmen during the paroxysm, *who in their ordinary health were very ordinary men.*" "Jean Huart," he adds, "tells us of a page, whose faculties *were up to the time of the attack very limited*, but who, in a fit of insanity, believing himself master of the empire, reasoned on the manner of governing it, in a way that astonished every body, and attracted many auditors less from curiosity than the desire of instruction;" but, without laying much stress upon this fact, I may refer the reader to the works of Mead, Willis, Haslam, Cox, Pinel, and Esquirol, all of whom take notice of the singular changes brought about by disease in the operation of the reflecting faculties.

From the preceding exposition of the symptoms of insanity, it will easily be understood how the excitement of fever some-

* Journal Général de Médecine, vol. xl. p. 155.

times restores the idiotic and the imbecile to reason and judgment. When the infirmity of mind depends on weakness and inaction of brain, the febrile paroxysm raises the tone and activity of the latter to the pitch required for the vigorous exercise of its functions, and so long as the stimulus lasts, the patient manifests talents and dispositions which disappear on its subsidence, and which stand in the same relation to his natural state, that delirium and extravagance occupy in regard to men of sound constitutions.

Having thus traced the origin of all the mental symptoms to diminution, perversion, or exaltation of some one or more of the primitive faculties of the mind, it becomes an easy matter to discover the source of their very partial and limited range in one case, and of the very variable and multifarious phenomena and sudden transitions apparent in another. If, as sometimes happens, only one or two of the mental powers are implicated, the patient is insane only on feelings or ideas related to these, and remains sound as to the objects and functions of all the other faculties, constituting what is called Monomania. If a group of organs, such as those of the moral sentiments, be disordered, then the derangement is characterized by excited, diminished, or perverted moral feeling, constituting in one form what is called Religious Melancholy. Another variety, from the same cause, is melancholy from self-accusation, fear of eternal punishment, and morbid scrupulosity. If the moral and religious feelings are *perverted*, then blasphemy and imprecations take the place of the devotional and benevolent tendencies previously existing. If, on the other, the morbid group belong to the propensities, then passion, cruelty, suspicion, unceasing mischief, or furious mania, combined with a considerable amount of sound reason and moral sense, are to be observed; in which state, the patient, conscious of the danger to which others are exposed from the ungovernableness of his passions, and of the impossibility of resistance to their impulses on his own part, retains sense and feeling enough to warn the bystander to provide for his safety by flight.

Lastly, if all the organs of the brain are disordered, all the powers of the mind suffer. Natural feeling, moral restraint, and sound judgment are all upset, and the patient raves violence, blasphemy, and folly by turns; or passes, in the course of a few hours, through all the phases of outward character, from the tumultuous agitation of infuriated rage to the deepest dejection of melancholy; and it is in such circumstances that the remark of Esquirol, that mania, monomania, melancholy, and dementia, succeed and alternate with each other, the disease itself remaining the same, is especially exemplified."

On monomania we meet with these remarks:

"Where, as in monomania, only one or two faculties are disordered, the rest remaining sound, the patient is at first conscious of the aberration of feeling or of thought which it produces, and employs all his powers to suppress and conceal the slightest appearance of its existence. Frequently he accomplishes this so successfully, that he goes on for months unsuspected, except by very close observers, and then, under some casual excitement, losing command of himself, gives full and sudden vent to his delusion in an act of manifest insanity. This often happens in monomania, and, as the act itself may either be a mere explosion of folly, of harmless passion, or of unaccountable apprehension and hatred, or be a direct infraction of the laws of morality, such as the perpetration of murder without an external motive, it behoves us to be extremely on our guard against condemning as a crime, what is in truth a *symptom* of insanity, and not to add the cruelty and ignominy of condemnation to the already severe visitations of disease. Dr. Marechal mentions a case in point to which I may refer.* A lady, unhappily married, nursed her infant for three months, when she became sad and taciturn, and was often in tears. One day sitting near the fire, she exclaimed with eagerness and agony, "*Snatch the child from me, or I will throw it into the flames,*" and then confessed that for a long time she had been struggling against an almost irresistible impulse to destroy the child, and that, on approaching a window or fire, the desire always returned. The infant was taken from her; she became melancholy, and, lamenting her unhappy propensity, attempted suicide. She recovered, but three years afterwards had a relapse, and in the second month of nursing was seized with the same unnatural propensity, and, after resisting its force for some time, again parted with the child, and, horrified at her own condition, repeatedly attempted suicide. Many instances have occurred to show, that although, as in this case, the desire to destroy the infant was almost the first symptom of insanity, yet as reason seemed in other respects entire, the mother would have been executed as a criminal, had the act been accomplished, instead of being submitted to medical treatment to be restored to health."

The "*duration, periodicity and symptomatic forms of mental derangement*" constitute the subjects of the seventh chapter. The copiousness of our extracts already made precludes us from more than barely noticing this chapter.

The "*appearances on dissection after mental derangement*"

* Archives Générales de Médecine, vol. xii.

are treated of in the next or eighth chapter. Dr. Combe expresses his belief that in insane persons after death we shall generally find unequivocal traces of cerebral disease, in the various forms of changes of colour, of consistence, or alterations of structure." He cites the experience of Mr. Davidson, house surgeon to the Lancaster County Lunatic Asylum, which contains upwards of four hundred patients, to the same effect. Mr. Davidson has examined with much care the bodies of more than two hundred patients who have died in the hospital since his appointment, and the result is that he has scarcely met with a single instance in which traces of disease in the brain or its membranes were not evident, even when the lunacy was recent, and the patient died of a different disease. The pia mater and cortical substance are the parts he has found more frequently in a morbid state.

In reply to the argument against the connexion between cerebral alteration and mental aberration, consisting in the alleged fact of persons retaining the possession of their intellects, in whom after death the brain was found disorganized, the author reasons in the following very pertinent strain.

"There is in reality a wide difference between the small portion of intellect called into action, either in the retirement of the habitual invalid, or in the limited sphere of a sick room, and that required and displayed by the same person when in health, in the wider field of public and private duties; and it is high time to make the distinction in practice, particularly where important conclusions necessarily depend on the accuracy with which our observations are made. Nothing is more common than to hear it affirmed of a patient, who returns a rational answer to a simple question, that his mind is entirely unimpaired; and nevertheless, to find, on inquiry, that he is altogether incapable of following a chain of reasoning, or of comprehending a line of detail, to which, when in health, he would have been much more than adequate; or, in other words, that his mind, though not in the usual sense deranged, *is greatly impaired in power.* Let any one, who denies this, attempt to think intently, or to study profitably any thing requiring a continued exercise of attention, while he is either recovering from acute disease, suffering from an ordinary fit of bile, or even walking about as a confirmed invalid, and he will soon be convinced of his error. Nothing is more usual, in ordinary life, than to see a person a little unwell lay down his book or his pen from *consciousness of incapacity, or perhaps ask for a novel*

or volume of tales to pass the time, as he cannot think or attend to any thing serious. This diminution of mental vigour is met with every day in persons confined even with a common cold, and yet the physician would never scruple to certify, if called upon, that in such circumstances A B was in perfect possession of all his faculties, when, in fact, he was all the time giving demonstrative proof that, although not raving or absolutely silly, his thinking powers were *impaired*, and palpably inadequate to their usual efforts.

"Another important circumstance is often overlooked in reasoning from such cases. The state of the intellect is alone attended to, and held to represent the mind, the condition of the propensities and moral faculties being altogether disregarded, when in reality they are as much parts of the mind as the intellect itself, and the portion of the brain dedicated by the Creator to their manifestations is much larger than that allotted to the intellect. The obvious consequence of this last arrangement being, that the parts of the brain belonging to the feelings may be diseased or injured, without necessarily impairing the intellect, the organs of which remain sound and entire. Greater accuracy in making observations, and greater caution in reasoning from them, are imperatively required, before the conclusions arrived at can be made available, either to substantiate or to set aside the opinions generally prevalent on the subject of the mind, and its connexion with the brain."

"*What are the proximate causes of mental derangement?*" is the problem proposed as the subject of the ninth chapter. The author does not so much profess to give the solution as to draw attention towards its elucidation; "and to show that the proximate cause is not the same in all cases; but differs according to the individual constitution and to the agency of the circumstances which have called the disease into existence." In this opinion he is sustained by the authority of Esquirol and other experienced writers on insanity.

The work before us concludes with a chapter on the "*prevention and treatment of mental derangement.*" The author excuses himself for not giving greater extension to this subject, owing to his having already transgressed the limits originally proposed for his labours—We must make an apology to our readers on similar grounds, for not being able to lay before them as fully as we could desire the views and directions inculcated by the author. Perhaps our regret is diminished by finding that there is not so much actually new as useful in this chapter. The

following remarks on the use of warm and tepid bathing and the shower bath are worthy of attention. We do not believe that sufficient attention is paid to preserving the entireness of cutaneous function in insanity. Dr. Combe is speaking of Esquirol's treatment by laxatives one day and the warm bath the next, and continues thus,

"When a dry state of the skin, restlessness, and violence are present, the same author says that great benefit will be derived from the warm bath, taking care that it be not made too hot. In the Salpetrière he orders it to be continued about two hours, and sometimes so long as eight hours daily, and never finds it induce debility when forty-eight hours are allowed to elapse before its repetition. Cold applications to the head, while the patient is in the bath, are considered useful. In his practice, the cold bathing is rarely resorted to in any form.

"I have never seen the warm bath carried to the same extent elsewhere, and therefore cannot offer an opinion of its propriety or safety; but I have witnessed its good effects, after due depletion, so often on a more limited scale, that I consider it a remedy of great power, and it is now pretty much employed in our public asylums, so that, before long, we may expect to be in possession of fixed rules for guiding us with more precision to the states in which it is applicable. As a preventive, and in procuring sleep, where narcotics cannot be given, it is very valuable. Mr. Davidson informed me, that in the Lancaster Asylum, a bath at 85° was used twice a week, as a means of cleanliness, for all the patients indiscriminately, and with excellent effect; and that, as a remedial agent, the cold or tepid shower-bath was in common use, after local depletion, apparently in the description of cases we are now considering, and that its effects in diminishing increased action, reducing heat and restlessness, and soothing the patient, were very marked; and unattended by any bad consequences, either of reaction or any thing else. From its utility and safety in such circumstances, it is repeated wherever the indications reappear, occasionally so often as three or four times in twenty-four hours."

The following observations in respect to food, are worthy of attention and remembrance.

"The cerebral state which gives rise to the asthenic forms of insanity, seems to be allied to that condition of the brain in fever, in which, after the period of excitement is past, wandering and delirium still continue from the irritability of weakness, and are removed by the cautious administration of wine, nourishing food, and opiates, which, if given earlier, would

have increased the aberration. This affinity is still further exemplified by the fact, that after depletion has been carried to its fullest admissible extent in mania, with increased action, the alienation often continues unaltered for several months, and is only exasperated by perseverance in the same treatment, while it is alleviated or cured by nourishment, tonics, exercise, and mental occupation properly regulated. Deprivation of a due supply of food to the patients in this state is followed by decided aggravation of the insanity, and often by its conversion into incurable fatuity. During the famine at the early part of the French Revolution, this result was common in the asylums of Bicètre and the Salpetrière; and Esquirol even says, that nothing contributes so much to the nocturnal quiet of a lunatic establishment as allowing meat and drink during the night to such patients as really desire them. And hence, as the mass of patients in confinement are beyond the active stage of the disease, the liberal allowance of food now ordered by the standing rules of almost all asylums."

When speaking of the moral treatment, the author thus expresses himself:

"In prescribing for the morbid conditions of other parts of the body, we find it necessary to regulate the functions which they perform in such a way as to assist, or at least not to interfere with, the beneficial action of the remedies employed. If the lungs are affected, we forbid exercise, loud speaking, or playing on wind-instruments; because all these tend to accelerate *respiration*, and this necessarily involves increased action in them. If the eye is inflamed, we regulate the admission of light and the exercise of *vision* according to the same rules. In affections of the brain, therefore, whether of an acute or less active kind, we ought, in ordinary consistency, to follow out the same practice; and in the former to withdraw all stimuli, and in the latter, to modify their agency, so as to secure beneficial results. When, for instance, we meet with a lunatic suffering from excitement of the organ of Cautiousness, as manifested by gloomy, desponding, and harassing anticipations of future evil, we ought to be scrupulous in avoiding every thing calculated to act further upon that particular mental function, as this would inevitably rouse it to higher activity and make matters worse; or, when we see an individual suffering from morbid exaltation of Veneration, and a prey to the mental symptoms by which it is characterized, we ought carefully to withdraw him from the presence of every object which addresses itself to that faculty till the disease is mitigated, and its renewed exercise becomes requisite to restore it to health. This, accordingly, forms the first grand principle in the moral treatment of the insane, and it is one for the application of

which Phrenology affords many facilities. By unfolding to us what the primitive powers of the mind are, and the objects and relations connected with each; and further, by enabling us to distinguish with accuracy the natural dispositions and talents of the patient, or the proportionate strength in which every individual faculty is possessed, Phrenology gives us a power of acting, and of adapting external circumstances to the exigencies of the case, with a precision, confidence, and consistency, which it is impossible to obtain in any other way. We have already seen, that, in the great majority of cases, the madness takes its character from the predominant organization and mental endowment, and that many lunatics possess the power of concealment and deceit to a degree that frequently defies scrutiny. Now, it gives the physician immense command over such patients, when by the examination of the head he can, as generally happens, discover the natural dispositions so accurately as to know what are the probable points of attack in the mental constitution; when to be on his guard against counterfeit and subterfuge; and what class of motives or line of mental discipline is likely to be attended with the best effects in subduing excitement, and promoting the return of reason. In enabling him to detect the machinations of the cunning, and the devices of the suicide, it is also of signal advantage, as well as in adapting the required precautions to the character on which they are intended to operate. When he finds a large endowment of Secretiveness and Cautiousness, combined with predominant animal organs, good intellect, and only moderate *moral*, he will at once feel that, however correct, plausible, and rational his patient may seem to be, he is in reality a dangerous neighbour, and in a state demanding the closest watching and superintendence."

A recommendation to treat the insane agreeably to the same code of morals, by attention to candour and truth, which is presumed to regulate us in our intercourse with the world generally, may excite some surprise, but is essentially sound in its tendency. We give insertion to the entire passage, the more willingly, because it conveys an eulogium, and we doubt not a well merited one, on the "Connecticut Retreat."

"The more nearly we can approximate our treatment of the insane to that of reasonable beings, the greater will be our success. We ought never to deceive them, to do a single act, or utter a single expression to them, which we would not do supposing them to be perfectly sane and able to judge of their own state, and of the propriety of our conduct towards them in the circumstances. One piece of deceit, however harmless, will forfeit confidence as soon as detected, and none are more

acute in its detection than the insane. It is, besides, not only bad in itself, but hostile to moral discipline, as it authorises deceit in others. Consistency and integrity may fail for the moment to soothe the patient, where deceit might for the moment succeed; but the purchase of present quiet on such terms is too injurious to both patient and physician to render it advisable; and therefore it ought not to be made. Those who wish to preserve and increase their influence over the lunatic, will be careful never to promise what they never intend to perform, and never to fail when once they have given their word. They will also habitually consult his feelings and show an interest in his comfort, happiness and recovery; while they will devote themselves to the removal of every offending cause, and to procuring every enjoyment and interest of society, occupation, and exercise which the patient can appreciate. So far as can be judged from Captain Hall's account of the Connecticut Retreat, already alluded to as remarkable for its superiority in effecting cures, the system pursued by Dr. Todd with such success is marked in every step by kindness, openness, and candour; and every effort is made to gain the sympathies of the inmates, and to connect them by feeling and affection with society. For this purpose, a committee of visitors, including ladies, make frequent and long visits, in the spirit, not of mere form and ceremony, but of active kindness and humanity, and the advantages resulting from such intercourse have proved to be incalculably great. The visitors must, of course, be persons of much sense, good nature, information, and tact, and have some general idea of how to conduct themselves, but, with these qualifications, their intercourse cannot fail to be grateful and salutary. This mode of addressing the feelings of the insane is, in fact, the most direct, and therefore the most powerful way of calling the mental functions and organs into healthy action. From the shyness and suspicion so frequently accompanying insanity, it may be more difficult to obtain access to the sympathies of the lunatic, and to become the object of his better feelings; but the distance and distrust at first shown often give way gradually to *sustained* kindness, perfect candour, and imperturbable equanimity, under provocation. For the patient, finding by experience that he has now met with a friend who will remain steady in his benevolent efforts for his comfort, however little return he may make for the kindness shown him, and feeling secure from the attack of caprice and retaliation, at last gives way, and derives consolation, hope, and strength of mind from free communion, not only with his physician, but with such discreet, intelligent, and benevolent friends as the latter may see advisable to admit to his presence."

Due exercise and occupation are very properly dwelt on with some emphasis by Dr. Combe.

"It is pleasing indeed to see from the late annual reports of some of our public institutions, how much anxiety is now shown on this point, both by the physicians and directors. In several of the reports of the Dundee Asylum, for example, the subject is recurred to with an earnestness betokening a deep sense of its importance, and the erection of sheds and workshops, in which the patients may exercise their trades, is strongly recommended, and enforced by the success of similar measures in some of the best continental and British establishments. To secure the same advantages for patients of the upper classes, who are unaccustomed to labour, a bowling-green has already been laid down, and a billiard-table is speedily to be added. In like manner, at James Murray's Royal Asylum, at Perth, in the Lancaster County Asylum, and in many others, efforts are made to employ the patients in husbandry, gardening, and other exercises, and with the best effects; although none of these hospitals have yet been provided with means fully adequate to the end in view. In the Lancaster Asylum, the patients of the lower classes are required to make their own beds, and keep their rooms clean, and to do such other duties as conduce to general cleanliness and comfort. This practice is decidedly beneficial, both as employing them, and as giving them a pleasing sense of their being useful, and not mere drones in society. The perfect order and neatness which reign in every department would do credit to the best regulated family."

We cannot forbear from making another extract on this very important topic. Perchance it may serve as a hint to some of our friends near home.

"After the preceding observations were written, I met with a strong and gratifying corroboration of their accuracy in the Tenth Report of the Directors of the Dundee Asylum, being that for the year ending in June 1830, and for which I am indebted to the kindness of a friend, who takes an interest in the subject. The new superintendent, "Mr. Mackintosh," says the Report, "immediately upon his appointment to the charge of the Dundee Asylum, anxious to qualify himself in the most perfect manner for the discharge of his duties, set out on a tour of inspection of all the most celebrated Lunatic Hospitals in Britain, and also of the Salpetrière at Paris, and the Royal Lunatic Asylum, and Dr. Esquirol's private establishment at Charenton. In all of these he found employment more or less resorted to as one of the most powerful efficients towards cure; but, in one establishment in particular, *the beneficial effects*

arising from it have been such, as to render restraint and confinement seldom, if ever, necessary, and the patients enjoy a freedom scarcely inferior to that which a person enjoys who is under no control. During their lucid intervals, they are permitted to attend their respective places of worship on Sundays, to go into the town occasionally on the other days of the week, and to take short excursions into the neighbouring country, sometimes accompanied by an attendant, and sometimes not; and although opportunities are thus afforded them of effecting a temporary escape, yet but one attempt of the kind has as yet been made, and every individual after his walk or ride returns to the asylum as to the home of his choice. This state of *rational quiet and considerate composure* is to be attributed, in a very great degree, to the *useful occupations or healthy amusements* in which the patients are *regularly* and *systematically* engaged; which, by calling off the thoughts from the objects or associations, which would otherwise disturb them by day, contribute to induce during the night tranquil repose and refreshing sleep. With these facts before their eyes, the Directors feel it to be a duty imperative upon them to fall upon some plan, without delay, by which the labouring class of patients in the institution, under their care, may be employed in those labours and trades to which they were accustomed previous to their confinement." It is delightful to see talent and philanthropy thus going hand in hand, and adopting the dictates of enlightened experience."

The copiousness of our extracts from Dr. Combe's work is the best evidence we can give of our opinion of its general merits. The rigid critic might find wherewithal to censure: for ourselves, we think that the importance of the subject, the laudable efforts to present it in a more philosophical shape, and to illustrate it by more clear and demonstrative evidence than we have heretofore been favoured with, are valid claims on the reader's attention and approbation of this work of Dr. Combe.

ART. IX.—CRUVEILHIER'S PATHOLOGICAL ANATOMY.

Anatomie Pathologique du Corps Humain, ou Descriptions, avec figures lithographiées et coloriées, des diverses alterations morbides dont le Corps Humain est susceptible. Par J. CRUVEILHIER, *Professeur d'Anatomie, &c. &c.*

Pathological Anatomy of the Human Body; or Descriptions, with coloured Lithographic Plates, of the different morbid alterations of which the Human Body is susceptible. By J. CRUVEILHIER, *Professor of Anatomy to the Faculty of Medicine of Paris, physician to the Maison Royale de Santé, Knight of the Legion of Honour, Member of the Royal Academy of Medicine, perpetual President of the Anatomical Society, &c. Livraisons* 1 . . . 9. *Paris,* 1830. 1831.

The beautiful invention of lithography has, we presume, suggested itself to many as a means peculiarly well adapted to the representation of the perishable and interesting materials of morbid anatomy. Such extraordinary beauty, facility and cheapness being afforded by this process for a great variety of objects only valuable to taste and fancy, it seemed a thousand pities that they should not be made to assist in the accumulation, preservation, and diffusion of the facts which compose this most invaluable science. If there be any peculiar importance to mankind in such a branch of knowledge as that which belongs to our profession; if the discrimination and cure of diseases be a more useful study than the forms of animals and plants, the features of distinguished men, or the comic scenes of domestic life, which we have seen so showily represented by means of the painted stone, there can certainly be no difference of opinion as regards the value of this agreeable art, when applied to those inquiries upon which is based nearly all that is positive and certain in the doctrines of medicine.

The fleeting nature of the materials from which the anatomical pathologist draws his deductions, lends a vast additional weight to these considerations. Many facts of great importance

rest upon *colour;* a circumstance in which a few hours produce the most destructive changes; whether the objects in question be left to themselves, exposed to the natural causes of decay and dissolution, or the attempt be made to preserve them by artificial processes. It matters little whether an inflamed tissue be dried into an opake, reddish black mass, or bleached to the last degree of delicacy by maceration in alcohol; the effect is equally remote from the real appearances of nature. Again, the *swellings* of diseased parts are marked by soft outlines which are immediately and entirely disfigured, either by the rigidity of desiccation, or the irregular contractions, coagulations and curvatures, undergone by a specimen in an anatomical jar. Similarly are we situated with regard to *density*, and some other qualities of morbid textures; while the preservation of the fluids is not even attempted.

Under these circumstances, the next and most obvious resource of the observer, is the pencil and the burin; and we have every reason to hope that, as well executed drawings increase, connected with accurate details of the cases in which the morbid disorganization occurred, a real advancement in science will be the result. By collecting drawings, made under these circumstances, something of the same effect is produced, which we witness so happily exhibited by collections in natural history. Well selected collections of natural objects are known to form the most powerful as well as agreeable mode of promoting and diffusing a knowledge of these branches of learning; studious men acquiring more by a single comparison, than by the prolonged but separate research of hours or days. When a numerous set of well characterised specimens is assembled, placed side by side, and arranged so as to illustrate itself, such a great mechanical advantage is gained for the extension of knowledge, as almost to compensate for the deficiencies of intellect. To augment a science so well exemplified and distributed, requires but a moderate exertion of the understanding; and the individual engaged in other pursuits, or who, from want of inclination, or even of natural power, is little inclined to expend much of his industry in the study of these subjects, may, if he obtain an unknown specimen which excites his curiosity, discover its proper analogies and distinctions almost at a glance. These advantages are certainly pos-

sessed in an equal degree by coloured representations of nature, provided they are executed in such a manner as to command confidence in their accuracy; and to this is further added, by the arts of coloured engraving and lithography, all the incalculable benefit of number and diffusion.

The success of this undertaking, if not altogether created, is at least mainly controlled by the accuracy and distinctness with which the figures are executed. In this respect, we should not hesitate to say the work before us stands unrivalled. It is indeed a permanent monument of fame to the author, the dissectors, the draughtsmen, the lithographers, by whose joint exertions it was produced, and to the liberal bookseller, M. Baillére, by whose honourable enterprize the attempt was furnished with its pecuniary means. It bears rather the aspect, on the part of the latter individual, of a generous sacrifice to science, than of an ordinary business operation. No expense has been spared, where expense could promote the scientific object of the work. The most beautiful coloured lithography is lavished to exhibit the appearances of a diseased stomach or spleen; and where the design is to represent the glistening cholesterine of the brain, paints possessing the metallic lustre are obtained, to to be impressed on paper by "the faithful stone." On the other hand, amid all this abundant display, there is nothing like the ostentatious extravagance we witness in some other works. The whole seems to have been exclusively directed by the spirit of science—we have no ridiculously enormous width of blank paper, which has been justly compared to a rivulet of text meandering through a meadow of margin; no diminutive figure occupying, as if ashamed of itself, the centre of an immense sheet otherwise unoccupied, and no dashing outlay of brush and graver upon incidentals, back grounds, and accessories. The surface of the plates is judiciously filled, not crowded, with useful and intelligible figures; and the text is fairly proportioned to the size of the volume and its illustrations. Where any of the figures are of a nature to be well represented by shading alone, shading only is employed, the expense of colours being deferred, by a just economy, to moments when it can be useful; and the effect thus produced is more pleasing to the eye, at least to ours, than that afforded by many productions we have seen, where the most indifferent objects are pourtray-

ed in a display of tints which only serves to draw off the attention from what they contain that is really instructive. Nor is the merit of the artists inferior to the style and getting up of the volume. The plain lithographs certainly exceed in beauty, in our opinion, the engravings of Dr. Baillie; while the coloured specimens, forming about two thirds of the whole, by far surpass any representations of anatomy which we have seen. Dr. Cruveilhier, in a refined spirit of politeness, while giving credit to those who have preceded him in undertakings of a similar description, speaks of Astley Cooper's plates of hernia, those of Dr. Hooper on the brain, those of Dr. Bright inserted in his Reports of Medical Cases, and those contained in Annesley's Diseases of India, as so many pictorial master-pieces: and adds, that the three last exhibit how great usefulness is possessed by colours in a faithful representation of morbid alterations, although the tone of the colouring is always "*a little forced.*" Without calling in question the merits of either of these useful works, or that, in particular, of collecting drawings, whether made by skilful or unpractised hands, of the recent morbid appearances found in diseases of the torrid zone, we must be allowed to say, that there can be no higher recommendation of the plates of Dr. Cruveilhier, either as regards outline, shading, or colouring, than a previous glance at those of Dr. Annesley.

Where such extraordinary pains are taken by individuals to subserve the cause of science, it is an act of bare and meagre justice to give at least to their names the praise due to their performance; a thin reward, certainly well earned, when the benefactor of mankind is satisfied with it. In connection with this, we may sketch some of the advantages possessed in the prosecution of the work. Dr. Cruveilhier's situation as professor of anatomy, hospital physician, and president of an anatomical society, give him perhaps the most concentrated opportunities in the world for accumulating cases furnished with dissections. "More fortunate than Albinus, who, deprived of all assistance, and filled with disgusting sensations, was often tempted to exclaim, as Vesalius had done before him, that the individuals whose corpses he dissected were less to be pitied than himself, I," says our author, "shall have for my coadjutors the larger number of my colleagues, the physicians and sur-

geons of the hospitals of Paris, who have already given me so many proofs of a co-operation as active as it is frank and faithful —I reckon no less upon the *concours* (a word for which we have unfortunately no corresponding English phrase or idea) of the members of the Anatomical Society, composed of the most eminent of the pupils of the Faculty, whose names will continually appear beneath my pen. The hospital to which I am attached as physician, the collections of the faculty, the *thousand subjects* which the board of hospitals annually furnishes for dissection to the rooms of the Ecole Pratique—these are the continually flowing sources in which I shall be enabled to obtain the innumerable materials of which I shall stand in need." It is proper to remind the American reader, that the corpses of these dissecting rooms are not the uninteresting, unexplained mass of putrefaction with which we so frequently have to deal; but that they come from the hospitals, institutions in which records are taken of every case; and that they hence easily furnish to those disposed to take the necessary trouble, the easy means of comparing the morbid appearances found with the previous symptoms observed on the sick bed. M. Cruveilhier considers himself equally fortunate in his artist; and the execution of the plates, as far as we can judge, fully bears him out in the style of his commendation. "I shall have the assistance, as a painter, of M. Chazal, whose name is already so honourably attached to the anatomy of the healthy organs, and who brings to his task a devotion and a constancy, worthy of all the praise bestowed upon his painter by the professor of Leyden. M. J. G. Martin, member of the Anatomical Society, profoundly versed in anatomy, is also so good as to attach his name to the pictorial department of this work, and in particular, to assist me with his scalpel in the difficult preparations." To mention the names of artists like these is indeed an act of justice—they are real benefactors to science. Were we to criticise, we should prefer the works of M. Chazal; those of the other painter partaking a little of stiffness and formality; yet no one could for a moment hesitate to pronounce the whole undertaking, in all its parts, highly honourable to all the parties concerned, and in every respect worthy of the age, the science, and the city which produced it.

It is not improbable that the progress of this splendid work,

which, among many other tasks of industry, has undergone a temporary suspension in consequence of the revolution of the celebrated three days, may prove to be arrested for some time. We shall therefore take the present opportunity of presenting an analysis drawn from a small part of what has already come to hand; which furnishes indeed an ample supply of rich materials, and from the isolated and unconnected nature of the articles, will in no degree suffer by being deprived of its contiguity with future numbers.

The two first plates are taken up with the subject of vesicles commonly considered as hydatids of the placenta. A lady, twenty-four years of age, in fine health, underwent all the common symptoms of pregnancy. At the fourth month, she suffered considerable hemorrhagies, accompanied by acute pains in the lumbar regions; and both these affections continued to return at irregular intervals, and without any discoverable cause. At length, at the seventh month, contractions of the uterus took place, with severe floodings; and she expelled a mass which is the principal subject of the figures before us. It had the appearance of an ovum of very considerable size, but containing a fetus whose development had been arrested; it only presenting the characters usual at the end of six weeks, while, as we have seen, it was really seven months from the probable date of conception. The membranes existed in the usual form, adhering very firmly to each other, and containing a large quantity of amniotic liquor. The outer surface was, on the one side, thickly covered with vesicular productions, while this appearance, upon the other, was entirely absent. Upon removing the surface, however, which was composed of a white, rugous, soft membrane, without cotyledons, but otherwise exhibiting the characters of the surface of the placenta—upon tearing and raising this, a thickly crowded mass of similar vesicles appeared, deeply imbedded in the substance of this dense mass. We might form a tolerable idea of the whole by imagining an ovum, such as is discharged by an early abortion, and covered with its spongy chorion, to have grown to an enormous size, and become filled, throughout its whole texture, with the vesicular bodies in question. These are of every imaginable shape, and vary in size from little larger than a grain of sand to that of a large hickory nut. They afford, in consequence, a lively exem-

plification of this affection, which might be taken for hydatids of the uterus or of the ovum.

Far from presenting, however, the usual encysted appearance of hydatids, these bodies are strung together by an intricate net-work of pedicles, ramifying in every direction, and frequently attached, in the number of six or seven, to the same vesicle. Some of the pedicles are impervious; while others have tubulated cavities, communicating with those of the vesicles. When torn off, the pedicles break with great ease; and large clusters of vesicles are separated, presenting the appearance of a bunch of grapes; and some of these are represented in the plates with extreme beauty. In one of the views a great number of vesicles are given, preserving a more or less tubular appearance, and running regularly from the surface of the chorion to a thin, whitish, but vascular coat, which lay on the surface next the uterus, and appeared to possess the character of the placenta. These tubular vesicles, after assuming a cylindrical or spindle shaped appearance, contracted to a thread, became impervious, and finally terminated in minute clusters of vesicles. Most of the vesicles with their connecting pedicles, were alike deeply imbedded in thick clots of blood. When the vesicles were opened, they were found to possess a cellular appearance, the divisions of which were frequently visible through their transparent sides. Fluid could frequently be forced backwards and forwards between the vesicles and their stems; while, in other instances, these last were impervious. The fluid sometimes resembled serum; and in other instances was tinged with blood. From all this, the sufficiently apparent inference is drawn, that these vesicular bodies bear no analogy to hydatids. We have no encysted appearance, nothing like the imperfect semblance of a mouth, presented by some of the latter substances, and no freedom of motion. All appeared to grow on a stalk, exactly like a bunch of grapes, were connected together by interlaced filaments, and were constituted of a cellular structure.

This vesicular affection of the placenta, seems to possess considerably more interest than is commonly ascribed to it. It seems, for example, to be more frequent than is usually supposed. In examining aborted ova, Dr. Cruveilhier has repeatedly found a number of vesicles more or less concealed in the sub-

stance of the spongy chorion, in such a manner as to escape a superficial observation. He apprehends that abortion is produced, in this affection, by the interception of the nutriment belonging to the fetus, from the mechanical interposition of these vesicles; and in particular from their occupying a part of the surface of adhesion by which fluids are drawn from the mother. Some very curious discussions seem to have arisen among the elder anatomists in relation to the mode of production of these substances; discussions which a brief reference shows to have been by far more extensive than we should have imagined upon this almost forgotten subject. The existence of placental vesicles is noticed by a considerable number of authors—the earlier observers regarded them as dilatations of the extremities of the arteries; the opinion in which, after so long a discussion, our author settles down. This view is also advocated by Ruysch and Haller; while Schreger considers them as varicosities of the lymphatic vessels. Naturalists have regarded them as hydatid worms; and they have been designated by the terms *tænia hydatigena*, *hydatoidea*, and *vesicularis*. M. Hippolyte Cloquet gives them the name of *acephalocystis racemosa*. Bremser expresses the opinion that they are really living animals; but acknowledges that he does not expect to find others of the same opinion. Rudolphi and Cuvier decide in opposition to him; while Percy states that he has seen them move themselves in the hollow of his hand, an appearance which, as our author suggests, may have been really produced by the pulsations of his own arteries. It has been remarked that the placental arteries are precisely those most adapted to the production of these vesicular appearances, as they are naturally formed with irregular enlargements and contractions. The manner in which they are produced has been also made a curious question. The suggestion that the pressure of adjacent parts has produced adhesion of the vessels from space to space, has been met by the remark that arteries which have undergone that process, as far as ascertained, become obliterated throughout the intervening portion; and the suggestion as to lymphatics is perhaps conclusively answered by the fact that no lymphatics have been shown to exist in the placenta. M. Cruveilhier starts the consideration that these tumefactions may be produced by enlargement of the cellular membrane between the coats of the minute

arteries, so as to obliterate their cavities; but concludes by stating that he conceives the sound course to be simply to record the fact, as a peculiarity of the placental arteries, without undertaking as yet to settle its mechanism.

In speaking of the frequency of diseases of the placenta, he notices four interesting cases, in which hectic fever existed, the parent was thought to be consumptive, and the child was born dead; all which effects were produced by a suppuration between the placenta and the uterus; and adds that in one of them he was enabled to predict the result—an effort of diagnosis which he justly states to have had a bold and imprudent appearance, until verified by the result.

Plate 3, though a much more splendid figure, is far less interesting in point of medical philosophy. It is so precisely on account of its rarity; being, so far as known, an absolute unique. Some students at the Ecole Pratique met with a singular production which they had mangled before they discovered its nature. It proved to be a chain of tumours, formed of, or rather at the expense of the superior, accessory superior, middle and inferior cervical, and superior thoracic ganglia of the great sympathetic. These were enormously enlarged; the principal mass being almost three inches long and one inch wide. Their texture was replaced by a dense, fibrous, cellular matter, leaving large areolæ, in which M. Cruveilhier could not detect the least trace of nervous matter, of either the white or cineritious species; although he found a few thin, whitish lines, which he takes to be the neurilema of nervous fibres, deprived of the medullary matter they originally contained. Dr. C. conceives the most elementary and universal truth at which we have attained in morbid anatomy to be this: that no elementary structure is ever *altered* by disease, the apparent changes which we meet with being really produced by the deposition of foreign matter, or the organization of new structures intermixed with the old, in consequence of which these latter are liable to absorption. Of this principle, expressed in his preface, the present case will form a beautiful exemplification.

No record is preserved of this curious case; nor were the remaining parts of the body in a condition to admit of examination; so that this otherwise interesting observation is absolutely

barren, until future facts shall have been compared with it. Under these circumstances, we spare the reader the minute details.

Plate 4, is a superb coloured figure of what is styled cancer of the kidney. Nearly all the lower part of the kidney is occupied with a yellow tubercular mass, containing a cavity in the centre, which had been filled with a sanious fluid; while round the superior half of this is laid a thick stratum of the matter which we call fungus hæmatodes. This substance, as both described and figured in the specimen before us, exactly resembles the fetal brain; from which is perceptible the propriety of the term used by the French, "encephaloid tumour." It is thickly sprinkled with red bloodvessels; or rather as M. Cruveilhier considers them, red channels, containing blood, without any vascular parietes. He observes, as a character serving to distinguish two different classes of morbid productions, that the one, embracing cancer, encephaloid tumour, false membrane, and gelatinous infiltration, are almost always productive of new vessels or tubes, containing blood; while among pus and tubercular matter, these are never found. The vessels or tubular cavities thus produced, he apprehends to be entirely unconnected with the general circulation; and in consequence, inclines decidedly to the opinion of Laënnec and others, that these productions (at least some of them) are really foreign existences, living like grafts, or parasitic animals, in the midst of the human texture, from which they derive their nourishment, but with which they have no other vital connection. Hence he endeavours to explain the incurable character of cancer. We may starve the cancer, by starving the patient at the same time; but it is a being entirely beyond the reach of medication, and will inevitably continue to exist.

The diagnosis of diseased kidney is acknowledged by our learned and scientific author to be a task of extreme difficulty. The present patient was fifty-two years of age, and had complained, five months previously, of severe pains round the umbilicus, followed by a discharge of bloody urine, which continued for a month; at the end of which time the urine returned to its natural appearance. From this time he suffered by a diarrhœa, which however was subject to many variations. He was found emaciated—without any yellow tinge—extremely debilitated—with his lower extremities œdematous—with the

tongue smooth and pale—thirsty—complaining of no pain. A large voluminous tumour was felt in the right lumbar region, extending from the edges of the ribs to the iliac fossa. This tumour was indolent, the patient not having discovered it until warned of it by his physician. An elastic tumidity was felt in the adjacent part of the abdomen. Tumefaction of the spleen was suspected, but as the patient was found not to have suffered with intermittent fever for twenty years, a fresh examination of the hardened body was made. It was found immoveably attached to the spine, capable of being felt from behind, and arranged perpendicularly, instead of the obliquity usual in enlarged spleen, which M. C. describes as projecting downwards, forwards, and to the right. It was then decided to be the left kidney; and this judgment was confirmed by the patient's narrative of his previous symptoms.—The lower half of the great intestine was found inflamed and ulcerated; an effect thought to be produced by the extension of the inflammation from the kidney to the great intestine, which adhered to it; as was also the case with the end of the duodenum and beginning of the jejunum.

Other phenomena are given which exemplify some of the sources of error in the use of the stethoscope; but we shall not copy them. The lungs were sound; and the pleura contained a quantity of watery serum, which had given rise to ægophony.

Plate 5, contains figures of two cases of inflammation of the kidney. Of the first of these, the most remarkable symptom was *asthma*. The respiration was sibilant, and the difficulty of breathing such as to give rise to orthopnœa. The cylinder betrayed, throughout both lungs, all the varieties of sibilant respiration which characterize the spasmodic constriction of the bronchia. The face was pale—the pulse nearly natural as to frequency, but small—the patient was stated to have suffered these symptoms fourteen days. The case was soon complicated with obstinate vomitings; and it was not till the thirty-third day after admission, that pain was felt on applying pressure to the abdominal cavity, particularly in the left lumbar and iliac region. Yet there was no distension, meteorism, nor fever. The first impression was, that the case was peritonitis; but a decision was ultimately made, that probabilities were more in favour of a gastritis, or a gelatinous softening of

the stomach and intestines. In four days, the patient expired; having manifested no very remarkable addition to the above symptoms, but undergone a great increase of them.

The lungs were found in a state of congestion, but otherwise *healthy;* the pleura, the heart, and the great bloodvessels were healthy; the stomach and intestines, containing an augmented amount of mucus, tinged of a deep yellow, but exhibiting no other traces of disease, except a number of red points thinly dispersed. Slices of the liver, and spleen, and the substance of the pancreas, were perfectly natural. The last named organ terminated in the first curvature of the duodenum; but was natural in its texture.

The urinary organs and uterus remained. The left kidney was in a state of atrophy, and reduced to one-eighth part of its natural size; while the corresponding capsula renalis was enlarged. The left kidney appeared to be the principal seat of disease. It was of the natural size, of a kind of coffee colour,* tinged with a faint blush, and sprinkled lightly with stellated dots, of a bright red. Its substance was so completely softened as to render it impossible to remove the investing membrane, or to make a section through its substance, without leaving the surface in a torn and pasty condition; which appearance, so difficult to represent in a drawing, is imitated with surprising success. The whole cortical matter was converted into a reddish white substance, of about the consistency of a poultice; from which no pus or serum could be expelled by pressure, but which appeared to contain a considerable quantity of them in intimate combination, forming one of the finest specimens of softening. The tubular matter of the kidneys was perfectly natural; the pelvis and ureter contained a great number of small calculi, together with a considerable amount of pus, which had found its way into the bladder; and the delicate lining membrane of these passages had became softened and removed in large spaces, so as to exhibit the areolar texture of the pelvis of the kidney. An *abscess*, about an inch long, was found lying along the internal edge of the pelvis of the kidney; and communicating with the latter by two orifices. There were three other abscesses, about the size of a pea, but without communications. The fat about the kidney was enormous in quan-

* *Café au lait*, clair, teint en rose.

tity; and that which immediately surrounded the ureter was indurated and intimately adherent to that tube, and at the lower end, formed a solid mass with the latter, and the left ovarium and fallopian tube. The opposite fallopian tube had adhered and become impervious. Other marks of chronic inflammation were found about the uterus; such as an adherence to the rectum, fibrous tumours on its posterior surface, under the peritoneum, and a small polypus within.

The patient, Madame B., was sixty-three years of age, and excessively fat, and was represented as having been habitually of a relaxed and phlegmatic habit. She had never passed calculi, nor complained of any suffering in the region of the bladder. For years previously she had pains in the loins, which were attributed to rheumatism—the attack, however, had come on with nausea and vomiting; which were ascribed to indigestion. She had, at the same time, severe pain in the left iliac and lumbar regions. Tartar emetic injections, bleeding and leeches had given her relief; and the symptoms had been again aggravated after drinking wine and water. She was alleged to have discharged her urine as usual, during all the time when she was at home; and while she was in the hospital, it could not be ascertained whether she urinated at all.

We would gladly carry further an analysis of this splendid production; but the bounds assigned to our paper necessarily interrupt us. We have taken the cases as they presented themselves; knowing no means of selection amid such rich and copious materials, to do justice to which would occupy a space totally disproportionate to the size of our undertaking. The subsequent articles are fully equal in interest to those which we have selected; and many of them superior in point of utility from their more frequent occurrence in practice. Among these are several plates of malconformations; in which, besides much monstrosity and unusual arrangement, as of blood-vessels, &c. there is furnished a series of beautiful exemplifications of club-foot, &c. which has given rise, we understand, in a great measure, to the useful labours of our townsman, Dr. Togno. Another series of four superb plates exhibits the follicular inflammation of the small intestines, to which we have had occasion so frequently to allude in our former numbers, displaying it in every stage of its progress and cure. Twelve plates, in the finest

style, illustrate the diseases of the brain; one furnishes several beautiful views of apoplexy of the spinal marrow; another a case of spina bifida; five uncoloured plates, finely executed, illustrate the subject of luxations; one, strangulated hernia, &c. &c. &c. The nine numbers in our hands contain fifty four plates, the great majority of which are coloured, and which illustrate probably eighty or ninety cases; scattered, apparently with a most judicious hand, over the various departments of medicine and surgery, and forming altogether by far the most agreeable and practically useful illustration which we have ever seen in the sad but invaluable science of morbid anatomy.

QUARTERLY SUMMARY

OF

MEDICAL AND SURGICAL INTELLIGENCE.

I. ANATOMY.

1. *Hermaphrodism.*—At the sitting of the Royal Academy of Medicine at Paris, December 14, M. Dupuytren described two individuals affected with what has been improperly denominated hermaphrodism. One of them is twenty-two years of age, and was entered in the register of the Etat Civil as a female, and was dressed as a girl up to the age of eighteen. When fifteen years old he experienced the venereal desire, and had attempted, but in vain, to have connexion with men. At eighteen his beard grew, his form became manly, and he began to look after women. Being recognized as a man at twenty years of age, he put on a suitable dress. In this individual there is no trace of an urethra in the penis. The scrotum is divided along its mesian line, and the orifice of the urethra appears at the perineum.

The other case is that of a child two years and a half old, and having at the bottom of the belly a red tumour covered with a mucous membrane, on which are two open orifices which continually distil drops of urine, and which consist in what is called an *extrophia* of the bladder.

2. *Newly discovered Muscles of the Penis.*—Mr. John Houston, M. R. I. A. &c. has published in the Dublin Hospital Reports, Vol. V. an account of two newly discovered muscles for compressing the dorsal vein of the penis, in man and other animals, and also of a similar provision for compressing the veins of the chameleon's tongue.

Mr. Houston commences with observing that there is a striking resemblance in the general construction of the penis among the various tribes of mammalia. They all have corpora cavernosa, and a corpus spongiosum, urethra, bloodvessels and muscles, so constituted as to evince a complete uniformity of design in their structure throughout the whole class.

The cavernous bodies are now well known to consist of a congeries of bloodvessels, chiefly veins, coiling and anastomosing among each other, and which compose their "entire," with the exception of the fibrous laminæ which give them form and strength.

The corpus spongiosum is also composed of innumerable bloodvessels; its extremity being swelled out into a bulb called the glans. In some carnivora, as the dog, the glans constitutes more than three-fourths of the bulk of the organ.

The arteries of the penis, derived from the iliac, spring from the pudics. Two branches usually enter the bulb and supply the corpus spongiosum;

two enter the corpora cavernosa by their crura, and two others, the dorsal arteries, after passing under the arch of the pubis, run forwards on the dorsum penis, parallel to each other, and enter the glans. These several branches communicate with each other more or less freely in different stages of their course. The vessels of the spongy body communicate through the fibrous coat of the corpus cavernosum with the vessels of that body.

The veins agree in number and situation with the arteries; those that accompany the arteriæ dorsales are the principal veins for the return of the blood. Their branches emanate from all parts of the penis; those derived from the corpus spongiosum wind round the sides of the penis, and unite on its dorsum with those from the corpus cavernosum and glans. Two large trunks are thus formed, which unite into one large vessel that passes under the arch of the pubis; and immediately afterwards spreads out into a plexus, enveloping the sides of the bladder and prostate, and at length terminating in the iliac veins.

While under the arch the dorsal vein occupies the centre of the upper surface of the penis, and the arteries and nerves lying on each side, are at a short distance from it.

Mr. Houston says, it is most probable that the veins are the chief, perhaps the only seat of that sanguineous accumulation that occurs during the turgescence of the penis, the arteries only carrying the blood to the organs.

Mr. Houston gives in detail the reasons for believing that neither the musculi erectores penis, acceleratores urinæ, nor transversales perinæi can so press upon all the veins of the penis as to produce erection; and he thinks it evident that their combined powers cannot produce the remarkable stagnation of blood in the vessels that is noticed in that condition; for the greatest outlet, that by the dorsal vein, would remain free and unobstructed.

We shall quote the following paragraph at full length. "In giving rise to that congestion which manifestly occurs in erections, there are most probably two *phenomena* (*!*) in operation; the one, a peculiar elevation of nervous energy which attracts through the arteries of the part a sudden and abundant flow of blood; the other, a mechanical process by which the blood is detained during the act, in the veins of the organ." We object to the above passage, because it avers the existence of a power which is not yet proved to exist, viz. that of *attracting* blood into an organ through the arteries, and by means of an elevated nervous energy in the part. If the elevated nervous energy is sufficient to attract the blood into an areolar tissue so as to expand and erect it, that same energy ought to be charged alone with the causation of the whole of the phenomena of erection, and no reference ought to be made to a mechanical contrivance for retaining the blood in the tissues. Mr. H. in the succeeding passages refers to many examples of areolar tissues which are subject to turgescence without the intervention of any mechanical dam. But he thinks that the mechanical apparatus for retaining the blood in the penis is designed to give a greater permanency to the fluxional movement, and enable it to give effect to the function of that organ; but evidently dissatisfied with this want of consistency in nature's contrivances, he says in a subsequent paragraph that the establishment of the fact would be important, and might perhaps justify us in inferring that nature always provides a mechanical agency for the purpose of accumulating the fluids in erectile tissues.

Mr. H. says he was first led to attend to this subject by the late ingenious Mr. Shekleton, who, while dissecting the penis of a dog, discovered two muscles connected with the venæ dorsales, and adapted to make pressure upon them.

The muscles under consideration in Mr. Houston's paper are situated between the arch of the pubis and the penis; he proposes to name them—

Compressores venæ dorsalis penis. Mr. H. found them readily in the dog, wolf, jackall, bear, badger, cat, racoon, coati-mondi, marmot, aguti, horse, seal, &c. &c., and he persevered in his search for them in man until he found them on the 15th of July, 1830, when he demonstrated them to many pupils and professors at Dublin, among whom are Drs. Cusack, Jacob, and Graves.

We must refer to the book for a description of these muscles in several animals; but in man, the compressores venæ dorsalis penis are less distinct than in most mammalia. They arise from the rami of the pubis above the origins of the erectores penis and crura, and ascending in a direction forwards, are inserted above the vena dorsalis by joining with each other in the mesian line. They form a thin stratum of muscular and tendinous fibres about one inch long and three quarters of an inch broad, and may perhaps be looked upon as portions of the erectores penis, which, instead of being inserted into the corpora cavernosa, mount over those bodies to exert their compressing influence on the vena dorsalis. They enclose between them and the penis, the vein, arteries and nerves of this region.

Mr. H. in order to test the effect of compression of the vena dorsalis made several experiments in which he tied up the veins in dogs, which was followed by frequent, easily excited, and long continued priapisms. In an experimen the tied up the dorsal arteries, which had no bad effect on the dog, but it had no priapisms.

In presenting the foregoing view of Mr. H.'s paper, we have made use, for the most part, of his own words. We should have been well pleased to give his whole article, word for word, because we regard the discovery as of very great importance, not merely as being a new anatomical fact, which it is very seldom the lot of moderns to meet with, but also, and more particularly, on account of its physiological application to the explanation of that riddle, areolar expansion, which, upon the hypothesis of *attraction*, has been heretofore absolutely unintelligible.

II. PHYSIOLOGY.

3. *Dr. Apjohn on Expired Air.*—The 5th vol. of the Dub. Hosp. Reports contains an account of "Experiments relative to the Carbonic Acid of Expired Air in health and in disease, by J. Apjohn, M. D." &c. &c.

It is not possible to give a description of the beautiful and simple contrivance with which Dr. Apjohn executed his experiments. Suffice it to say, that the respired air, being measured, was received into a bladder; it was subsequently transferred to a vessel containing caustic potassa, the affinity of which for carbonic acid is well known. The carbonic acid being absorbed the air remaining was measured, and the difference between the original quantity and the residual air after absorption was the amount of the carbonic acid exhaled. From numerous experiments carefully performed, it was found that the carbonic acid of air once respired, was at a mean of the several experiments but 3.6 instead of 8.5. the estimate of Messrs. Allen and Pepys' observations.

In these results Dr. Apjohn nearly agreed with those obtained by Dr. Prout, to which he refers as published in the Annals of Philosophy, vol. ii. page 350, the mean of Dr. P.'s experiments being 3.45.

Dr. Apjohn also speaks of the coincidence between his results and those of Dr. Prout, relative to the influence of the period of the twenty-four hours in which the observations were made, viz. that the quantity of carbonic acid obtained its maximum between 11 A. M. and 1 P. M., and that it was at its minimum at 8 P. M. But he found that there was occasional

irregularity at other periods of the day, as was also observed by Dr. P.—an irregularity that could sometimes be charged to the influence of a depression of the mind, while he did not discover that the use of vinous drinks exerted any sensible influence on the quantity of carbonic acid exhaled. Messrs. Allen and Pepys had stated that air once respired, contained nearly as much carbonic acid as that which had been repeatedly breathed; but Dr. Apjohn shows by the following table that Messrs. A. and P. committed a great error in making such a statement.

August.	Carb. acid once respired.	Carb. acid respired as often as possible.
3.	3.47	6.4
4.	4.1	7.1
7.	4.3	7.1
12.	4.1	6.0

The above table shows that one respiration of air never yielded more than 4.3., and Dr. Apjohn says, that although the respirations were repeated until he was threatened with asphyxia, the quantity produced never could be carried above 8.—while Messrs. A. and Pepys state that 8.5 is the mean found by a single respiration.

Mr. Nysten has stated that when air is repeatedly respired, it attains to the maximum quantity of carbonic acid, and if the respiration of it is continued after that, the carbonic acid is diminished in quantity. Such was not the effect produced by Dr. Apjohn's experiments, for he never found that after raising the per centage to 8, it was reduced below that amount, by the most persevering repetitions of the breathing.

The author further states, that if about five per cent. of the oxygen be removed from atmospheric air, it will no longer support combustion—and the same effect will be produced by introducing into pure atmospheric air fifteen per cent. of carbonic acid; hence it appears that the vitiation of air by respiration is produced by a double cause, one the reduction of its oxygen and the other the addition of carbonic acid to it. If the 3.5 per cent. of carbonic acid, or even the 8 per cent. were added to atmospheric air, without actually abstracting its oxygen from it, it would be still respirable, but in nature the carbonic acid becomes not a simple addition, but a substitute for oxygen.

Dr. Apjohn and Mr. Grimshaw, his friend, went to a manufacturing establishment, in which there was a room at 60 degrees of the thermometer, and another where the mercury stood at between 146 and 152.

The carbonic acid produced in a temperature of

60° by A. was 4.3—at a temperature of 149° 2.7
by G. 4.4 3.0

There is a table representing the quantity of carbonic acid expired by patients under several different diseases, as phthisis, continued fever, empyema, diseases of the heart, hydrothorax, &c. In all the organic affections of the thoracic viscera, says Dr. A., the proportion of carbonic acid is materially reduced, and particularly in diseases of the heart. The case of Enkes who laboured under hypertrophy of the organ was remarkable—she yielded but 1.6, although her pulse was constantly at 110, with sound lungs. It is diminished in dropsy and probably in pregnancy, whereas its amount is not diminished, but sometimes increased in continued fevers and all acute affections.

4. *The placental Bruit de Soufflet.*—In a former number of this Journal we gave some account of the application of the stethoscope for the purpose of investigating the condition of the womb and its contents. In the Dublin Hospital Reports Vol. V., is a paper on this subject, by Dr. Evory Kennedy, of considerable length. The auscultation with the stethoscope or with the ear enables us to detect two kinds of sounds, one arising from the action of the fœtal heart, the other from the rush of blood into the placenta.—The latter sound from its resemblance to the whizzing noise of a bellows, is called bruit de soufflet, or as it is now englished, placental bellows-sound. The placental soufflet is not always alike: at one time it is like the roaring of a conch shell when held close to the ear; at others it resembles the sound produced by rasping or sawing, and again it is a musical or hissing sound.

Dr. Kennedy has found it similar to the cooing of a dove, and sometimes a sound like that of the drone of a bag-pipe coexists, but does not interfere with it. The most constant form is a combination of the bellows with the sawing or hissing sound, commencing with one of the former and ending with the latter, which is sometimes so protracted, that the last soufflet is audible when the subsequent one begins, seeming to run into each other. These sounds are readily distinguishable in advanced pregnancy, and though not so audible and distinct in the early stages, they are still sufficiently so to the practised ear.

Dr. Kennedy gives a pretty long statement of his views relative to the connection of the fœtus with the mother—we cannot follow him in all his details, the sum of which however may be stated as follows:

The ovule descending along the fallopian tube enters the cavity of the womb, and pushes before it that part of the decidua which stops the mouth of the tube. The part pushed away is called the reflected decidua, and when the ovule has enlarged so as to bring the reflected into contact with the original or true decidua, the vascular surface of the chorion unites with it, and the place of union becomes the place of the placenta, which consists of two portions, one belonging to the chorion, and one belonging to the decidua.

According to this notion of Dr. Kennedy, we have a double layer of decidua betwixt the womb and chorion. He fully denies that any vascular communication exists, or has been found to exist betwixt the mother and the ovum; but he makes one placenta, consisting of two parts, the maternal portion formed of the decidua, being vascular and directly connected with the vascular system of the womb, and the other very vascular also and directly connected with the child.

Such is not our view of this subject; such a view we think cannot be taken upon a fair consideration of the circumstances; for example, the whole product of conception comes off in delivery—both the fœtal and maternal portions as they are called, are thrown out by the contraction of the womb; and so easily are they detached, that a fall, a fright, or any considerable physical exertion is frequently found to cause the placenta to be partially detached from its connection with the womb. In cases even of adhesion of the placenta, the consequence probably of a somewhat inflammatory excitement, we are mostly enabled to peel off the placenta with great facility with the ends of the fingers inserted between it and the womb. And in pregnant women subjected to autopsy, and those who have undergone the cesarian operation, no difficulty ordinarily exists in removing the whole of the afterbirth. Now, we ask, could this be the case if the maternal portion of the placenta was connected with the womb by hundreds and thousands of arteries and veins,—are arteries so weak that they can be plucked up by the roots like hair or grass? No. We are compelled to

suppose that the placenta separates in the middle, leaving its maternal portion adherent to the womb like the acetabula of the mammalia, or else that the adhesion betwixt it and the womb is exceedingly slight, the bond betwixt them being merely a delicate laminar tissue which may transmit a few capillary vessels.

But to proceed with our account of Dr. Kennedy's opinions.—

He conceives that the placental soufflet depends on the rush of blood through the vessels of the womb, which are much more numerous and larger at the part to which the placenta is attached; whence he calls it the placental portion of the womb, and he deems it possible that the sound may be partly owing to the passage of the blood through what he calls the maternal portion of the placenta also.

The placental soufflet is heard only when the fœtus is alive—it ceases upon its death, but the sound is distinctly periodical, and exactly synchronous with the arterial pulse of the mother. It is always heard in that part of the womb to which the placenta is or has been attached, so that when the maternal portion of the placenta ceases to have pervious vessels there is no placental soufflet.

The sound must depend on the rush of blood along arteries, for it is systolic: it cannot depend on the fœtal circulation, for it is synchronous with the movement of the mother's heart; and lastly, it is only observed about the place where the placenta is attached.

There is in Dr. Evory Kennedy's paper a singular contradiction, for he informs us at p. 241, that "The placental sound is present in pregnant women, only when the utero-placental circulation exists, and ceases when the vessels which serve to sustain this function are no longer pervious. A fact which we can ascertain by examining a woman shortly before parturition, when we observe this phenomenon in full energy; and again, when the uterus is empty and perfectly contracted after delivery, or when the fœtus having died *in utero*, an obstruction in this system of vessels is produced, in all which cases not the slightest vestige of the phenomenon can be discovered."

In a subsequent part of his paper, at p. 244, Dr. Kennedy refers to a preceding paragraph in which he had mentioned the *possibility* of the placental sound depending on the circulation in the maternal portion of the placenta. "What," says he, "affords a strong presumption in favour of this opinion, is the change of character which the placental sound undergoes when the circulation is confined to the arteries of the placental portion of the uterus, without entering the placenta, as in those cases where the phenomenon is observed to continue after the expulsion of this body, or the *death of the fœtus in utero*, when the placental circulation has ceased; for the death of the fœtus in utero and consequent cessation of the fœtal circulation, do not, of necessity, cause the discontinuance of the soufflet although they alter its characters; neither does the sound invariably cease on the separation and expulsion of the placenta," &c. &c.

The above citation serves to show how completely we are left in the dark upon this physiological point by Dr. Kennedy; for if, as at p. 241, the soufflet ceases with the fœtal circulation or expulsion of the placenta, then we might refer it to some dependence on that circulation, or placenta; and again, if, as at p. 244, it may continue after the death or birth of the child and the delivery of the afterbirth, it is plainly independent of the ovum.

In either case, however, it seems more consonant with the dictates of prudence, to refer it to the action of the placental portion of the womb, which is endowed with a higher degree of vascularity than the other parts of the organ, the more particularly as the sound has by some observers been found to exist on every part of the womb.

The application of the various modes of auscultation relative to the placental soufflet and the fœtal pulses, needs no illustration here, for it will at once be evident that the stethoscope or the ear may reveal the fact of pregnancy when the placental soufflet or the action of the fœtal heart is discoverable by these means.

Dr. Kennedy says he has not succeeded in any case in detecting the placental sound until after the second month from impregnation; but he has frequently done so in the tenth, eleventh, and twelfth weeks.

III. PATHOLOGY.

5. *Acute and Chronic Œsophagitis.*—From a paper by Dr. Mondiére contained in the number for December 1830, of the Archives Générales, we condense the following description of the symptoms of œsophagitis. The most constant symptoms of inflammation of the œsophagus are heat, pain, vomiting, hiccough, spasm, the discharge of a glairy fluid, thirst, &c. The first symptom is pain, accompanied and generally preceded by heat and dryness at some point along the course of the œsophagus; this pain is at first light, but soon becomes more intense and is augmented when the patient speaks or attempts to swallow; it becomes insupportable when the food that has been taken passes over the part at which the inflammation is seated. The pain may be so intense as to prevent the patient from drinking although suffering from thirst. It is ordinarily fixed, but may pass successively along the whole length of the œsophagus. Dr. Mondiére thus describes from personal experience some of the phenomena of this form of inflammation. He was attacked by an intense pharyngo-œsophagitis which he treated by two applications of leeches, emollient cataplasms, and sinapised pediluvia, &c. "I experienced," he remarks, "a guttural cough, attended with a painful and difficult discharge of thick viscid mucus. For some days the pain was stationary, being felt at the inferior part of the neck on a level with the larynx; day by day however it shifted to a point lower down in the neck, and in this manner passed along the whole course of the œsophagus; it remained for a short time stationary at a point corresponding with the inferior part of the sternum, disappearing finally about the tenth day. For four days I was unable to swallow either solids or fluids; I was able to mitigate my thirst only by holding cold water in my mouth or by sucking an orange—on attempting to swallow merely a spoonful of fluid, I experienced at the part where the œsophagus was inflamed, a sensation of burning and tearing of which it is difficult to form any idea. About the 5th day the pain I felt was supportable, but for a long time I was obliged still to take my food perfectly cold." The author has collected from various sources a number of cases of the disease he describes, adapted to show its course and terminations. We copy the following which is derived from the work of M. Billard upon the diseases of children. It presents an example of œsophagitis terminating by gangrene. An infant 16 months old, affected with rickets, entered the infirmary labouring under *herpes labialis* which had occurred subsequently to a very mild attack of measles: some days after its admission, very frequent vomiting occurred, particularly after eating, with acid eructations, a small and low pulse, general paleness of the skin, disgust for food. The child continued to sink, without any complaint of pain, crying or agitation. The foregoing symptoms persisted for some time, but towards the period of death, the vomiting became less frequent, the matter discharged being mucus mixed with

whitish flocculi. The pulse still small and feeble, became somewhat quicker. Finally, eructations without vomiting occurred, emaciation rapidly increased and the patient sank, without having presented any symptoms of a more marked character than those described. *Autopsy.* General paleness of the body—perfect marasmus—mouth sound—soft grayish spots surrounded with a bright red circle upon the pillars of the soft palate, the sides of the glottis, and along the œsophagus, the mucous membrane presenting long irregular escars of the colour of soot and detached in shreds; in the intervals between these escars the membrane was of a bright red, presenting deep excavations penetrating almost entirely through the coats of the œsophagus, and from which was evidently exhaled a gangrenous odour. The stomach presented merely red striæ. The small intestines pale.

6. *Neuralgia of the Face disappearing on the spontaneous occurrence of Ptyalism.*—This interesting case is related by Dr. Carresi in the *Annali Universali di Medicina* for *Oct.* 1830. A female 52 years old, in very delicate health, had experienced for four months a violent pain in the nerves of the face. This pain had occurred subsequently to an exposure to cold. It had been unsuccessfully treated by a variety of remedies; many of the means employed appeared indeed rather to increase it. The patient obtaining no relief gave up the use of medicine entirely. For fifteen days the pain continued unabated, when an abundant secretion of saliva occurred spontaneously. The saliva discharged had a sweet taste resembling honey. For three days it increased so much in quantity that the patient appeared as though she were discharging a fluid from her mouth by vomiting. Whenever she spake or slept with the mouth open it ran out in a continued stream, and when she fell asleep with her mouth closed she was in imminent danger of suffocation. During the whole of this time her bowels were constipated, the urine small in quantity and all the other secretions diminished in amount. With the augmentation of the salivary secretion the neuralgic pain of the face gradually diminished. Dr. Carresi considering the ptyalism which occurred in this case as a critical discharge, merely prescribed slightly astringent gargles, with the view of preventing its sudden suppression and the consequent occurrence of a profuse diarrhœa. The pain of the face finally disappeared entirely, and the discharge of saliva becoming gradually less abundant, finally ceased and the patient soon recovered her ordinary health.

7. *Condition of the Liver in many cases of Icterus.* The following summary is from a paper on this subject by M. Corbin, which appeared originally in the *Archives.* We are indebted for it to Johnson's Review for April of the present year.

Icterus is a disease which is very common, but the causes of the yellow suffusion of the skin are often very obscure. When evident symptoms of gall stones do not exist, we have nothing but conjecture as to the change in the regular current of the bile. It may be viscid bile plugging up the ducts—or tumors pressing on them—or inflammation of the duodenum, or other causes of which we are ignorant. The disease is not often fatal, and therefore dissection has not thrown so much light on the pathology of the complaint as on that of some others. It has even been discussed in a concourse at Paris, whether the liver itself be always the seat of the cause which induces icterus. We know indeed, that jaundice will suddenly arise from strong emotions of the mind; but surely this must be from derangement of the biliary apparatus. But to come to facts, out of 1800 patients in the wards of *La Charité*, between the 1st of January 1828, and 1st of April 1830, 22 were cases of icterus. From this number were excluded

all cases of fugitive or slight tinges of yellow on the skin, from temporary bilious affections or indigestion. The cases were all regular icterus. Ten were in females and twelve in males. Fifteen were cured and seven died; a very great proportion in the mortality, as compared with experience in this country. Some of these seven became complicated with other severe affections before death—others presented nothing but the jaundice. The following is a concise exposé of these seven cases.

Case 1. A young man 22 years old, died August 22d 1828, in consequence of small pox, which had come on a short time after the commencement of intense jaundice. The liver was more yellow than natural, and presented brown granulations interspersed in its substance. The biliary ducts were free from obstruction.

Case 2. An old man aged 64 entered the wards with jaundice Feb. 13th 1830, and died of peripneumony of the right lung March 7th. The jaundice had nearly disappeared before death. The liver was of a pale yellow colour, but the biliary ducts were free from obstruction.

Case 3. A female, affected with encysted ovarian dropsy of both sides for six years, was seized with icterus ten days before her death, and the complaint had become more and more intense up to that time. The liver had been compressed by the ovarian cyst, and was softer than natural. It was of a pale yellow—no obstruction could be detected in the ducts.

Case 4. An unmarried female, aged 30, had been twice in the hospital for liver affection, and ultimately died there May 1st, 1829. During life, the liver could be felt projecting below the ribs, and appeared tuberculated to the touch. There was ascites, and for four months before death, decided jaundice—slight at first, but gradually and regularly becoming more intense. On dissection, the liver was found enlarged, lobulated, interspersed with round bodies of encephaloid substance, and gorged with bile. The biliary ducts were free from obstruction.

Case 5. A man aged 63 years, entered the hospital April 27th, 1828, in a state of extreme emaciation and debility. He had cough, and other symptoms of pulmonary affection; but he complained chiefly of pain in the right hypochondrium, which, he said, was of long standing. The liver appeared to be considerably enlarged. He was intensely jaundiced. On dissection, the liver was found to be of great size, and full of tubercles, some of them softened down, containing a liquid or soft encephaloid substance. The gall bladder was enormously distended with green bile. The biliary ducts were entirely free from obstruction.

Case 6. A man 65 years old, entered the hospital November 15th, 1829, with intense jaundice. He was in such a state of prostration that little information could be elicited from him. It was ascertained, however, that the jaundice was of fifteen days standing. He died three days afterwards. On dissection, some yellow serum was found in the cavity of the abdomen. There was redness, but no ulceration in the mucous membrane of the stomach and bowels. The liver rose very high in the right side of the chest, without any apparent cause. It was larger than natural. It was full of tubercles of various sizes, consistencies, and colours. The gall bladder was distended with bile, but the biliary ducts were pervious, and quite free from obstruction.

Case 7. A man aged 74 years, (formerly Counsellor of Embassy) entered the hospital February 24th, 1828. His whole face was of a beautiful yellow colour. This had been of ten days duration. He had lost his appetite, was costive, and extremely weak. The urine was green—the liver appeared enlarged. Leeches were applied, and some medicines prescribed, which appeared to be of use: but on the 9th of March a diarrhœa occurred and continued for some days, then ceased. After this the legs became

œdematous—ascites supervened; and on the 28th of the same month he died. On dissection, the duodenum was found united to the liver, or rather to a cancerous mass connected with that organ. This mass was of the size of a man's fist. The nature of it is not distinctly described. It included part of the pancreas, the biliary duct, the cervix of the gall bladder, and a portion of the concave surface of the liver. The biliary ducts were annihilated, or, at all events, totally impervious. The gall bladder was converted into a solid mass, somewhat resembling the substance of the cancerous tumour alluded to. In its centre was found a small quantity of inspissated bile. The liver itself was studded with encephaloid tubercles. From each incision made into its substance, a quantity of aqueous bile issued forth.

8. *Pathological Appearances presented in the bodies of the Insane dead.*—The following observations were collected in the Lunatic Hospital of Turin: we derive them from the April (1831) number of the Medico-Chirurgical Review.

1. *Case of cheerful Mania.*—The dura mater much injected, and adhering in many places to the pia mater—the latter softened—the brain pale, and rather softer than natural—cerebral convolutions effaced—right ventricle full of water—cerebellum and spinal marrow sound—lungs disorganized—stomach and intestines livid, with gangrenous spots—liver softened.

2. *Melancholic Monomania, with tendency to suicide.*—Membranes of the brain gorged with blood—no other unusual appearance in the head—none in the chest—small intestines inflamed, as was the whole mucous membrane of the digestive tube, from the mouth downwards—many aphthæ in this track—liver enlarged and indurated—biliary concretions in the gall bladder—spleen enlarged and indurated.

3. *Mania with Chorea.*—Effusion under the arachnoid—cerebral substance hard and much injected—sanguineous effusion into the spinal canal, with traces of inflammation along the spinal marrow—all the other organs sound.

4. *Mania which terminated in Idiocy.*—Some points of gangrenous aspect in the small intestines—brain very much softened, with much serum in the ventricles—nothing unusual in the other organs.

5. *Suicidal Mania.*—Meninges and cerebral substance highly injected—heart large—traces of phlogosis in the digestive tube, especially in the duodenum and jejunum, whose parietes were thickened.

6. *Mania with Pride.*—Meninges thickened and injected, having the appearance of parchment—strong adhesions between the two hemispheres—brain itself much injected—intestinal tube slightly inflamed.

7. *General Mania.*—Much effusion between the membranes of the brain—pia mater inflamed even to suppuration—cerebellum sound, as were the thoracic and abdominal viscera.

8. *Melancholia.*—Considerable inflammation in the small intestines—cerebral meninges injected—the other organs sound.

9. *General Emphysema caused by inflammable Gas.*—At the session of the Royal Academy of Medicine of Paris held on the 4th of January 1831, the following interesting case was read by M. Bally. A man of 25 years of age, had been ill for 15 days when he entered the hospital Cochin. He then laboured under symptoms of typhus fever: he complained, also, of a severe pain of the left thigh, and in his delirium asserted that he had been bitten in the knee by a dog; but upon the most minute examination no traces of any such bite could be discovered. The thigh as well as the scrotum were swollen—on the subsequent day the patient died. Autopsy, 8 hours after death. The corpse was found stained by a large amount of blood that had

transuded through the skin of the thigh and cranium, which were deprived of their epidermis; blood flowed also from the nose. The whole body was emphysematous. The left lower extremity was nearly double its natural size, of a brownish violet colour and covered with numerous phyctenæ; of these some were of a black colour, very extensive, collected in groups and gave discharge to a reddish serum mixed with a considerable quantity of gas: others were whitish and gave out only gas. The limb on being struck gave a hollow sound, and when pressed with the hand a manifest crepitation was produced. The abdomen was strongly distended with gas. The face and temples were injected and of a violet colour; incisions into the hairy scalp gave exit to a considerable quantity of dark blood. The nervous centre, and the lungs exhibited nothing remarkable. The heart was pale and empty. The morbid phenomena in the intestines were those usually met with after death from typhus fever. Bubbles of air filled the vessels of the pia mater and the left saphena vein. The lymphatic ganglions of the mesentery were enlarged and contained a gas, which took fire and exploded when the flame of a candle was brought in contact with it. The same was the case in regard to the air which issued from scarifications made into the legs, thighs and scrotum. A puncture being made into the cavity of the abdomen, the gas which escaped by it took fire on the approach of a candle—the flame produced by it was blue at its base and white at its summit—it continued for a considerable time. The combustion extended from the stream of gas to the edges of the wound made by the trochar, the flesh there became black and was consumed—the opening through the parietes of the abdomen acquiring double its original diameter. The gas contained in the subcutaneous cellular tissue over the thorax took fire in the same manner. M. Bally is of opinion that this case is unique and throws considerable light on the manner in which spontaneous combustion of the human body takes place. This combustion he conceives is occasioned by the production of a gas, secreted in the tissues by a morbid vital action, and which is inflamed by a spark of electricity coming from the body itself. He conceives that the production of the inflammable gas upon which the emphysema in this case depended, cannot be considered as a cadaveric phenomenon, as the emphysema existed previously to death: the examination of the body was made only eight hours after the extinction of life, and the corpse presented no indications of putrefaction. The reading of this case elicited a discussion. M. Breschet admitted that a morbid action taking place in the living tissues might give rise to the production of a large amount of inflammable gas, which is perhaps the cause of spontaneous conbustion, but doubted whether the natural electricity of the body would inflame the gas thus produced: this, he conceived, would require the contact of an ignited substance, as has occurred in all the cases of human combustion which have been observed for some years back. Many cases were recited in which an inflammable gas was found to exist in the organs of the body. M. Deneux noticed an instance recorded by Leduc in which there escaped from the womb during delivery, a gas which took fire and exploded—other members cited cases in which enormous emphysematæ promptly occurred either during life or after death. Some referred these collections of gas to a morbid secretion—others believed that more frequently, if not always, they are the effect of a putrid decomposition which may commence during life, but most usually does not occur until after death.

10. *Abscess of the Spleen and of the Brain.*—The following case is from Rust's Magazine, vol. 31. 1830. A dyer, aged 20 years, of a good constitution, experienced after lifting a heavy bundle, lancinating pains in the left hypochondrium, and soon after a spitting of blood. Three weeks after this he entered the hospital, labouring under pneumonia with anorexia, constipation, a greenish coated tongue, nausea and vomiting, and violent

fever. During four days he was bled once, and had administered to him a solution of salts, followed by a nitrous potion; at the end of this period the disease of the chest disappeared, but the gastric affection augmented. The fever and violent pains in the left hypochondrium were combatted by the application of leeches and the use of calomel. After a diminution of the symptoms for some days, the vomiting recurred, but was arrested by the use of analeptics. A slight mental alienation now manifested itself followed by stupor. The administration of musk and phosphorus were ineffectual in its removal. The application of a blister was followed by a momenmentary disappearance of the mental affection, but speedily a deep coma occurred soon followed by death—preceding which the whole body was covered with a copious sweat. On opening the body, the spleen was found converted into an immense abscess, the parietes of which gave way on the slightest pressure,—they had formed attachments to the diaphragm, intestines, and the peritoneum lining the abdomen. On the surface of the brain several lymphatic exudations were noticed, and in the left hemisphere was discovered an abscess about the size of a nut, which communicated with the left lateral ventricle.

11. *Cancer of the Brain.*—At the session of the Royal Academy of Medicine of Paris, of the 8th of March, 1831, M. Rullier presented an anatomical preparation, the history of which he gave as follows. It was of the brain of a female 40 years of age, and of a good constitution. Eighteen months previous to her death she was seized suddenly with epileptic convulsions; these were at first at long intervals and of considerable violence, but subsequently they were less frequent and milder. She was subject also to excruciating attacks of cephalalgia which recurred periodically. Her vision became gradually weakened and finally destroyed, the other external senses experienced changes of a very anomalous character. Her intellectual faculties became at a later period affected also. Although the patient ate heartily, she became emaciated and weak. For about six weeks before her decease her condition appeared to be much improved; finally, however, during the night she was seized with a violent convulsion, followed by repeated attacks of epilepsy with loss of consciousness, and a feeling of impending suffocation terminating in death. *Autopsy.* Acute dropsy of the lateral ventricles of the brain, which appeared to have been the immediate cause of death. Organic degeneration of the middle lobe of the right hemisphere. At this part the brain appeared to be changed into a fibrous structure, of a white colour, and so tenacious, that it could be forcibly twisted without being broken. The striated body of the same side was softened, and in its immediate vicinity existed a cyst filled with a gelatiniform substance of very soft consistence. The oblique nerves from and including their commissure were atrophied.

12. *Causes of Death in Membranous Inflammations.*—In an article under this title, contained in the December (1830) number of the *Annales de la Médecine Physiologique*, M. Broussais has attempted to point out the causes of death from inflammations of the membranes. The following are the general conclusions to which he has arrived.

1st. Membranous inflammations, especially those of the abdomen, and above all gastritis and enteritis, give rise frequently from their very commencement to a congestion of blood in the brain and spinal marrow, which may destroy life, if not removed by appropriate remedies, before the primary disease has run through its stages, and even in a very short period; or rather they become the prominent disease as occurs in infants, in whom most ordinarily disease of the brain is caused by a gastro-enteritis.

2d. During the course of these diseases, there exists always a sympathetic irritation of the brain and spinal marrow, by which the acceleration of the circulation and respiration is increased, the intellectual functions are impeded, the sensations perverted, the voluntary muscles are incapacitated from performing their proper motions, the action of respiration is rendered irregular, in a word by it is caused all the nervous symptoms by which the membranous inflammations are accompanied, even under the mildest form.

3d. Where the inflammations under consideration have produced extensive morbid alteration of the mucous tissues, and menace a fatal termination, nervous symptoms present themselves of a more serious character than those noticed above. These symptoms assume the form of delirium and convulsions where the irritation affecting the brain is seated principally at its periphery—they assume the form of coma when the irritation becomes stronger in the centre of the brain, and tends to produce the exhalation by which the ventricles are filled and distended.

4th. It is this irritation, the traces of which always indicate a degree of inflammation, that terminates the life of the patient, by precipitating, as we believe, the ennervative movements, whenever death is not induced either by compression of the brain, by rupture of its fibres, by hæmorrhage, or by compression or considerable morbid lesion of the lungs or heart. We may even add, that peritonitis, whether it be produced or not by the perforation of the digestive tube, causes death only by the disturbance which it induces in the ennervation of the encephalo-rachidien centres, at least excepting when there does not occur a copious effusion of blood into the cavity of the peritoneum.

5th. Finally, we believe that our observations will permit us to conclude that the destruction of the mucous membrane of the digestive tube in the acute diseases which are or have been denominated *essential fevers*, is always the effect of inflammation; and if at certain points we find this membrane, or the parts surrounding those spots at which it has been destroyed, in a state of atrophy and pale, this arises from the blood having been attracted by irritation towards some other part in the last hours of life, or from aqueous fluids by their presence or passage, having carried away the globules of blood and macerated the tissue already weakened and disorganized by the inflammation.

13. *Phthisis Pulmonalis—Softening of the Brain—Calculi in the Vesiculæ Seminales.*—We find the following case in the London Medical and Surgical Journal, November, 1830. It is related by Charles Mitchell, Surgeon. A man aged forty-five years, of great height and apparently of a good constitution, after exposure to cold, was seized in the month of January, 1829, with a severe chill, cough and pain in the chest. He refused to be bled and took only, for a short time, powders adapted to induce continued nausea—from these he derived no advantage. Six weeks from the commencement of the attack whilst walking in the street and conversing with a friend, he lost all at once the command over his reasoning faculties, and shortly after his speech. In this state he remained for two days, after which the symptoms of pulmonary disease became aggravated to an alarming extent. After some days he again lost suddenly his power of utterance—the mouth was at the same time drawn to the left side and his skin became pale and cold. At the end of eight days, the hemiplegia of the right side was complete so far as regarded the movement of the muscles: feeling however still continued. The disease of the lungs proceeded rapidly, and about the end of the month of August, the patient died in a state of complete marasmus. On opening the body, besides the morbid alterations in the lungs and in-

testines ordinarily found in those who die of phthisis, a thin layer of serum was found beneath the arachnoid membrane of the brain—the pia mater was strongly injected—the ventricles and base of the cranium contained about eight ounces of serum. The anterior lobe of the left hemisphere was softened to such an extent that the cornua ammonis of that side had disappeared, and the medullary matter which composed it swam in the form of shreds in the fluid contained in the ventricles. Independent of these lesions, the right vesicula seminalis contained more than two hundred small calculi of an earthy character. No symptom during the life of the patient, caused the existence of these calculi to be suspected. Their formation is referred by Mr. Mitchell, to the long inactivity of the organs.

14. *Pneumonia.*—From a paper entitled *Recherches sur la Pneumonie*, by Henri Clermond-Lombard, D. M., contained in the *Bull. de la Société Med. d'Emulation*, it appears from the observations made by that gentleman that pneumonias of the right side are about one-third more frequent than those of the left. This he attempts to account for from the larger size and transverse direction of the right branch of the pulmonary artery. Pneumonia produces the greatest ravages during the two extremes of life. "If," remarks M. C., "we compare together the different periods of life, we shall find that adults are much less subject than infants to inflammation of the parenchyma of the lungs. Pneumonic inflammations constitute in the former but a fourth of their diseases, while in infants the proportion varies from a fourth to a fifth. The periods of infancy at which pneumonia most frequently occurs are, 1. The first or second year—2. the thirteenth year—3. the first month of existence. The periods of life at which adults are most subject to pneumonia, are 1. Old age—from the fifty-fifth, to the eighty-fifth year—2. between the twenty-third and twenty-seventh years."

15. *Symptoms of Asthma, of an Organic Affection of the Heart, and of extensive Disease of the Stomach, &c. from Compression of the eighth pair of Nerves by Encephaloid Tumors.*—The following case is highly interesting, as well from the obscurity of the diagnosis, as from its extreme rarity. It is related in the January number, 1831, of the *Journal Hebdomadaire*, by M. Montault. Julie H——, aged twenty-six years, lacemaker, was admitted into the Hôtel Dieu, on the 17th of March, 1829. She stated that she had been sick for fifteen days; on her admission her condition was as follows. Disagreeable taste in the mouth, nausea and vomiting—tongue natural—constipation—no pain at the epigastrium; the patient referred all her sufferings to the region of the heart. There was general paleness of the surface; inability to sleep—pulse very variable. Cough frequent, returning in paroxysms with a sense of strangulation—at first without expectoration, but soon giving rise to the discharge of a thick matter in small masses. Respiration sonorous with a loud mucous rattle within the chest. Had had no menstrual discharge for six months. On a level with the left sterno-clavicular articulation a tumor of about the size of a nut was perceptible—it was without pulsation and not painful on pressure. This tumour had slowly developed itself without any local symptoms of inflammation, and was considered to be one of the substernal glands tumefied. The disease of the patient had commenced in the beginning of March, 1829, without any evident cause, with hoarseness, difficulty of respiration, sonorous cough resembling that of croup and constriction of the throat. Occasionally the cough resembled that of pertussis. The patient was bled once in the arm—leeches were applied around the neck and sinapisms to the feet. Her symptoms persisted as described until the 21st of March, when frequent hiccough occurred with more frequent vomiting, and picking at the bed

clothes. The patient now fell into a state of exhaustion, of which no better idea can be given than by comparing it with the partial somnolency and stammering of a drunken person. She died on the 23d. During her residence in the hospital, the patient was bled from the arm, had several applications of leeches to the epigastrium, tisan of chiendent with Seltzer water, purgative injections, sinapised pediluvia, and blister over the sternum. *Autopsy*, thirty-four hours after death. The tumor on the left side of the neck was formed by a hard mass, white at its centre, having a lobulated appearance and presenting several red points—in a word an encephaloid mass. In the lungs no trace of tubercles was discovered; with the exception of a slight inflammatory engorgement at the base of the right lung, they were perfectly healthy. The bronchiæ, particularly their ramifications, contained a considerable quantity of a muco-purulent matter similar to that expectorated during the life of the patient. The heart and pericardium exhibited no morbid alteration—the same was the case with the æsophagus, the stomach and other organs of the abdomen.

Considering the absence of organic lesions of any importance, it was difficult to say upon what the symptoms under which the patient had laboured depended, when the encephaloid tumor existing at the upper edge of the sternum suggested the idea that perhaps the pneumono-gastric nerves, either of one or both sides, had been compressed by some tumor similar to that referred to. On a minute examination it was accordingly found, 1st. That a tumor of this kind about the size of a nut existed at the inferior part of the anterior parietes of the trachea in which it was, as it were, incased, and communicated by a small opening with the cavity of the windpipe—2d. Another similar tumor existed between the pulmonary artery and the arch of the aorta, precisely at the spot occupied by the cardiac nerves and ganglions—a 3d communicated also with the trachea, and compressed the recurrent nerve of the right side, and a 4th was found much lower and to the left, and was confounded completely with the recurrent of that side.

16. *Vaccination.*—At the session of the Royal Academy of Medicine of Paris, held on the 15th of January of this year, M. Emery read, in the name of the Vaccine commission, the report which is made annually to government in relation to the vaccinations performed during the year in France.

From the facts furnished by the vaccinators the commission concludes, 1. That the varioloid is not a new disease—it was observed in Ancône, in 1551, as reported by Amatus—and described in the same year by Fracastor. Since then it has been noticed by nearly every physician as occurring in all the variolous epidemics, under the name of bastard variola, the variolæ spuriæ of Van Swieten—it has been described by the Ancient Committee of Vaccination from its first creation, and by the American and English writers since 1814. 2. That the varioloid does not prevent in those who have been affected with it, the small pox and vaccine disease, as has been asserted by MM. Guillou and Gendrin; even its inoculation or contact may give rise to one or other of these affections. MM. Lafont, Gouzy, Dugal, Robert, Honoré and Pazer, have produced by it the small pox, and M. Millon has produced the vaccine disease in individuals who had the varioloid. 3d. That it may communicate itself by contact in persons who have been vaccinated or variolated, but more readily in the latter than in the former, particularly during the existence of variolous epidemics—when it is, in fact, that it appears, and if by the general extension of vaccination we prevent the occurrence of these epidemics we shall probably extinguish the varioloid. 4. Finally, that the varioloid is merely a modified small pox, and always a mild disease. The resemblance be-

tween the two diseases is manifest only during the first seven days; at the commencement of the second week the pustules of the varioloid become detached, fall off and the disease is completely finished by the eleventh day. The varioloid seems to be nothing more than an abated small pox, and while the pustule in the latter attacks all the tissues of the skin, in the former it never involves any other than the papillary layer.

17. *Prevention of Cholera.*—From the *Annales de la Méd. Physiol.* of Dr. Broussais we copy the following means recommended for preventing the attack of cholera, during the epidemic of that disease now prevailing in the north of Europe. They are addressed by the medical authorities of the place to the inhabitants of Nijni-Novgorod, and appeared originally in the *Northern Bee.* In general they are highly judicious and equally adapted to prevent an attack of almost every prevailing disease.

"The principal symptoms of cholera morbus are severe pains of the head, constant vomiting accompanied with dysentery, and finally convulsions or spasms of the legs. To preserve themselves from its attack, the inhabitants should attend strictly to the following precautions. 1. To avoid as much as possible the influence of cold, and during the inclement weather which prevails at this season of the year to wear warmer clothing than usual, and to defend the feet and legs with substantial boots. The feet should always be kept dry and the clothes immediately changed when they have been wet with rain. 2. Never to sleep in the open air during the night or day, and especially on the damp ground. 3. To avoid loading the stomach with an excess of food, especially such as is indigestible, consequently it is strictly prohibited to eat apples, prunes, melons, cucumbers, raw turnips, carrots, mushrooms and similar species of food. 4. To make as little use as possible of stimulating drinks and all aliment of a heating nature—especially to abstain from eating garlic. 5. To be very careful to preserve the body perfectly clean, to change the linen as often as possible, and to observe the strictest cleanliness not only in the houses but also in the streets, courts and alleys. 6. Never to allow the air to stagnate in any apartment—to prevent this the windows should be left open when the weather is fine, and when it is damp or rainy a fire should be lighted and the apartment frequently perfumed with vinegar, &c. 7. Never to go out in the morning fasting and to avoid excessive fatigue in the labours of the day. 8. As soon as any individual becomes affected with the disease, immediate information is to be communicated to the bureau of police of the quarter in which the person resides, where a physician will always be found ready to afford the proper assistance to the patient. The master of a house who does not immediately communicate such information will incur a very great responsibility. 9. Until the physician arrives, the patient should if possible be conveyed to a separate apartment, which is to be perfumed repeatedly with vinegar, &c. As a still further means of precaution the hands should be washed in vinegar every time they have touched the patient or any article he has used. 10. Should the patient die from the want of prompt medical assistance, his clothes and the bed upon which he has lain should be carefully washed and exposed to the air during at least four days before any one attempts to make use of them. The body should always be interred within twenty-four hours after death. 11. If the physician thinks proper to send the patient to the hospital, to have him better attended to, or to observe more effectually the progress of the disease, no pay will be demanded for those in indigent circumstances. 12. The authorities of this place upon the assurances given them by the physicians who have carefully examined the symptoms and progress of the disease which prevails in Nijni-Novgorod, certify to the inhabitants that

they will escape the disease by conforming strictly to the above directions, and demanding the assistance of a physician on the first appearance of any deviation from health. An important means of preventing an attack is to avoid carefully the least despondency or chagrin, and on the contrary to preserve a cheerful and tranquil disposition.

IV. THERAPEUTICS.

18. *Antiphlogistic treatment of Cutaneous Diseases.*—In a clinical lecture, Dr. Elliotson threw out some important observations on the antiphlogistic treatment of diseases of the skin. A girl was admitted "into St. Thomas' hospital" with impetigo of her arms and various parts of the body. She had headach, drowsiness, giddiness, and full pulse. She was put on very low diet, and bled from time to time, (the blood being generally inflamed,) while mercury was moderately exhibited. By this treatment, and this alone, the patient was soon cured of her impetigo, without any quackeries of local applications. In another case, where the eruption might be termed eczema, the same treatment was adopted, and the same results ensued. There is no doubt, as Dr. Johnson remarks, that the majority of cutaneous diseases are more than skin deep, and would oftener give way to proper medicines internally exhibited, more especially with low diet, than to the farrago of external remedies.

19. *Treatment of Hemiplegia.*—Dr. Prichard, of Bristol, (Eng.) has drawn the attention of the profession to a mode of treating old and obstinate hemiplegia, and other diseases of the head, which he has found more successful than any other. He properly observes that recent cases are to be treated by antiphlogistics and local depletion, together with a cautious use of mercury; but, after these measures have been pursued for a certain time, depletory remedies can no longer be employed, and counter irritation, with a drain from the vicinity of the disease, is most likely to be beneficial. For this purpose, Dr. P. makes an incision in the line of the sagittal suture, or posterior to that, and fills the incision with peas, which are to be renewed and kept discharging for a considerable time. He has employed this process with much advantage in many other affections of the head besides hemiplegia; more especially in cases of stupor, or coma occurring in the course of severe typhoid fevers. Many years ago, we were in the habit of using a somewhat similar remedy in cases of epilepsy. The head being well shaved, a narrow slip of lytta plaster was applied in the line of the sagittal suture, and when the skin was removed, a cord of silk or cotton thread imbued with blistering ointment, was laid along the above line, and daily renewed. This kept up a constant purulent discharge from the part, and is of extremely easy application.—*Med. Ch. Rev. for April*, 1831, *from London Med. Gaz.*

20. *Ol. Terebinth. in Tetanus.*—Dr. Gibbon, of Swansea, has reported in a late number of the Medical Gazette of London, a case illustrative of the efficacy of the oil of turpentine in traumatic Tetanus. We borrow the following condensed account of it from the Medico-Chirurgical Review: "The patient was a female, who received a wound in the hand, and in ten or twelve days afterwards showed symptoms of tetanus, and this disease soon became established. Dr. G. ordered a liniment of oil of turpentine and laudanum to be rubbed over the greater part of the body. An injection, composed of two ounces of turpentine and one ounce of sweet oil,

with gruel, was administered; and six grains of calomel were ordered every hour. These medicines were continued for several days, with some modifications, and in eight or nine days the disease might be said to be subdued. There was then slight ptyalism established."

21. *Acupuncturation.*—The following case of rheumatism is related in the 7th Volume (p. 799,) of the London Medical Gazette, by Mr. Richard Dix, House Surgeon to the Derby Infirmary: "Joshua Smith, aged 35, admitted November 15th, 1830, into the Derby Infirmary, under Dr. Blent, has suffered from sciatica a year and a half, during which period he has been attended by several medical men. His symptoms are at present very severe; he is unable to raise himself into the erect position, or to walk, without extreme torture; and says, that the pain he has suffered since the first commencement of his complaint has been such as to prevent his obtaining sleep; he reports that he has been frequently cupped, and submitted to the application of moxa; has repeatedly used different baths, and taken a variety of medicines with but little relief. Dr. B. under these circumstances, prescribed acupuncturation, and directed four needles, each an inch and a half in length, to be inserted where pain was principally felt, every other day, and to let them remain an hour. This plan was persevered in till December 6th, when he found himself much improved; his pains were less severe and less fixed, and he could walk with greater freedom. He now wished to try the steam bath, and the acupuncturation was omitted; but after using it a fortnight, and his complaint making no progress, he requested to have the needles again introduced, which was done and continued as before until January 15th, when he found himself quite free from pain, and able to walk with the greatest ease; his general health during this time was good, and the only medicine he took was a few aperient pills to regulate his bowels. He was discharged cured the following week."

In another case, reported in the same paper by Mr. Dix, the patient was admitted on the 25th October, for violent pains in the course both of the sciatic and anterior crural nerves. After using a variety of remedies until the 24th November with but little benefit, acupuncturation was had recourse to. Four needles were introduced, as in the former case, and repeated regularly on each alternate day for three weeks, with progressive amendment; and at the end of that time she found herself perfectly well, and was discharged cured.

Dr. John Tatam Banks, one of the Physicians to the Lowth Dispensary, reports in the Edinburgh Medical and Surgical Journal for April, 1831, five cases of rheumatic and neuralgic affections, in which the same remedy was used with decided and prompt success. Aware that this treatment has been immemorially followed in many eastern parts of the world, in *acute* muscular and nervous pains, Dr. Banks was repeatedly led to try its effects in similar cases; but in no instance was it accompanied with that decided advantage which invariably attended its use in chronic affections. Thus, so far as his experience goes, it accords with Dr. Elliotson's and Mr. Churchill's observations, that acupuncture is chiefly useful in chronic cases. Dr. B. remarks, that, among upwards of sixty cases of chronic rheumatism, not in one has he failed to afford immediate, and in many, permanent relief, by acupuncturation.

In the latest number of the Medico-Chirurgical Review, (for April, 1831,) we find a short notice of a case of sciatica of twelve years standing, cured by acupuncture. It is reported from the Western Dispensary. The patient was an aged female, and the pain was almost intolerable. Colchicum,

Dover's powder, and various other means, having proved unprofitable, acupuncture was employed and the pain instantly ceased. There was no return of the sciatica!

22. *Extract from a letter communicated by Dr. T. Harris, dated Washington, April 6th,* 1831.—I send you an interesting case, showing the extent to which blood-letting was successfully used, in the case of a child, labouring under cerebral affection.

I was called at 8 o'clock, A. M. March 27th ultimo, to visit Susan Patten, a well grown, robust child, aged ten years, (who had lately recovered from a severe attack of scarlet fever,) and found her in a state of apoplexy, (supposed to have been brought on by eating an orange,) with stertor, difficult respiration, bloated countenance, skin below the natural temperature, pulse at the wrist depressed, carotids beating with great force. Blood was immediately taken from the arm to the amount of fourteen ounces; and powders composed of calomel, tartrite of antimony, and nitrate of potassa, were directed to be given every hour, until they operated on the stomach and bowels—mustard plasters to the feet. A short time after I left the patient she was seized with strong convulsions, and Doctors Washington and Causin were called, during my absence, to see her. At noon (my second visit) I met Dr. Causin in consultation; all the symptoms were much aggravated: ten ounces of blood were taken from the orifice made in the morning, and leeches directed to the temples and forehead—powders continued every hour. At 3 o'clock we were sent for in great haste, with information that the child was dying in strong convulsions, and the leeches had not drawn. On our arrival there appeared scarcely a ray of hope left; the other arm was tied up, and twelve ounces of blood taken from a large orifice, after which, the pulse became fuller, and the skin warm; cups were directed to the temples, by which she lost twelve ounces more of blood—blisters to the nape of the neck, wrists, and ancles—cold applications to the head—powders continued. At 6 o'clock, P. M., we were informed that all the symptoms had suddenly yielded after the cupping, and the powders had acted well on the stomach and bowels. We soon afterwards saw the patient, and found her calm and rational, with scarcely a vestige of disease left, except a slight subsultus tendinum, which we attributed to the loss of blood, and irritation of the blisters: fifteen drops of laudanum were directed, and she rested well during the night.

Her convalescence, with the aid of cordial nourishment, was unusually rapid, and her system has not suffered in the slightest degree by the loss of blood.

In the space of *eight hours* this child lost *fifty ounces of blood;* and took Calom. grs. xxiv; Tart. Antim. grs. iv; Nitr. Potass. ℈ij., before there was any sensible effect produced.

Your friend, and obedient servant,
H. HUNTT.

To Thomas Harris, M. D., Philadelphia.

23. *Treatment of Lock-Jaw of Infants.*—The following remarks on the causes and prevention of this compiaint, by John Hancock, M. D. are extracted from the Edinburgh Medical and Surgical Journal. They will be read with interest. The disease in question is not frequently observed in this country, at least in the middle or northern states, but prevails extensively in the West Indies. It is so frequent and fatal in the colonies of Essequebo and Demerara, that at an average estimate it kills half of the whole number of infants which are born there; and Dr. H. has been informed that nearly the same proportion is destroyed by it in the neighbouring

islands. It has, he continues, baffled the skill of every medical practitioner who has hitherto attempted its cure, at least in ninety-nine cases out of a hundred. "From what I have been informed, it appears to me that the use of cold water is an almost certain prophylactic against the invasion of this disease in the new born infant. It was formerly pursued" "on the east coast of Essequebo, under the care of an Indian woman who acted as midwife, &c. They were in the habit of dipping the infants in cold water, and of throwing it over and washing them therewith immediately after birth, and repeating it once or twice a day, without the occurrence of the disease in a single instance for many years. I can also say from my own knowledge, that the native Indians universally employ cold water with their infants, as described above, and I have never heard of an infant among them that had the infirmity in question."

Dr. H. is of the opinion that the chief and essential cause of the disease is an irritative impression made on the nervous system by the compression of the umbilical chord, caused by the ligature which is applied to it at birth, a custom which, to say nothing of its destructive tendency, is entirely unnecessary and uncalled for. He remarks that the application of turpentine, on cutting the cord, is represented by some to be a preventive of lock-jaw. "It may, when other circumstances are favourable, have some influence, but is not alone worthy of much confidence, as experience has fully proved."

Dr. H. next asks whether the disease may not be prevented by cutting the umbilical chord, and applying a cautery, instead of tying with ligature, according to the Indian practice. "They compress the end of the chord between the fingers for a minute or two, and apply a hot iron or an ignited coal." He thinks well of soft cataplasms applied to the umbilicus; and states that as opium is efficient in the cure of the lock-jaw, it may reasonably be expected to be useful in preventing it.

"It further seems probable that one of the efficient causes of lock-jaw in new born infants lies in the purging plan so commonly pursued. Of this I am fully convinced, since I have found the disease in adults to be constantly aggravated by purging. The plantation, Walton Hall, on the coast of Essequebo, lost many infants under the usual treatment, when about eight years since, a direction paper, from a supposed connoisseur, was suspended at the entrance of the lying-in-house, which specified that the navel should be dressed with spirits of turpentine, and that a certain purging mixture should be given daily. I do not remember the composition; but castor oil was the main ingredient. These directions were followed for several years, during which time most of them(?) were destroyed by locked jaw. This practice was continued until the present manager, Mr. Keane, broke the spell; and since that time, I am informed they have been more fortunate." Purging, Dr. H. thinks, produces these fatal effects, by proving a "fertile source of irritation to the tender bowels of the infant," "directly tending to induce tetanus at a time when the nervous system is already in a state of perturbation from the separation of the umbilicus."

24. *Treatment of Peritonitis.*—The following extract from the report of a clinical lecture delivered at St. Thomas's hospital by Dr. Elliotson will be read with interest, as affording an idea of the mode of treating peritonitis, adopted by the most experienced and acute physicians in London. A patient came in for peritonitis, "and had had the disease, more or less, for seven days. It had come on suddenly after very hard work, so that most probably the man had been sweating profusely and was then exposed to cold. The abdomen was tender over every part.

He vomited, and had had no stool as he said, for three days. He was bled immediately to fainting, and forty leeches were then without delay applied on the abdomen. I gave him a scruple of calomel, as he had had no stool for three days, and half an ounce of castor oil was to be taken every two hours afterwards. He took two or three doses of castor oil, when it was judged right to give him another scruple of calomel, as well as a common clyster and more castor oil in the evening. This was all done, and then his bowels were opened; but it was not effected till he had taken two scruples of calomel, two or three ounces of castor oil, and had had a clyster. Sixteen leeches were applied in the evening, and he was considerably better. However, in the course of two or three days, some tenderness still existing in the abdomen, twenty leeches more were applied. He had a dose of calomel three or four hours afterwards, his mouth became tender; and he was presently well. You may judge of the rapidity of the cure, from the fact, that although the case was very severe, the agony excruciating, he only came in on the 7th instant, and was able to go out on the 24th, notwithstanding these evacuations, and the free exhibition of mercury."

25. *Epilepsy cured by Antiphlogistics.*—In the same lecture Dr. Elliotson describes the following case. The patient was a boy. "He had been ill three weeks. He had a constant throbbing at his temples and in the forehead, and at the vertex. He had tightness of the forehead, as if it were bound by a hoop; a sensation of weight in the forehead, constant vertigo, and some little dimness of sight. His sleep was disturbed by frightful dreams. Sometimes his hands and his feet were benumbed, and tingled as if they were asleep. Besides all these symptoms, which were constant, he had fits of epilepsy. He was in the Hospital, it seems, six years ago, for similar general symptoms in the head, and had faintings, as he termed them; but now, instead of faintings, he had regular epilepsy. I mentioned in a former lecture, speaking of epilepsy, that in its mildest degree it resembles fainting. This last accordingly when he was here before, felt just as if he were only fainting; but this was decided inflammatory epilepsy, and to be removed required only antiphlogistic means.

He was cupped on the occiput to a pint, put on low diet and took mercury—ten grains of blue pill three times a day. On the 20th of December he was bled to a pint, and the 4th (January), twenty leeches were applied to his temples; and these were continued every other day with a cold wash. From the 12th of January twenty leeches were applied every day, to the end of the month; and from the first of February they were applied every other day. He had no more fits; in fact he had none after he came to the hospital, and all the pains in his head diminished so considerably they they were reduced to nothing, and there was no occasion to keep him in the house. Of course he took aperient medicine—house physic every day, according as it was necessary. This was one of the cases of inflammatory epilepsy, and it was subdued by the adoption of anti-inflammatory means."

26. *Treatment of Rheumatism.*—Dr. Lowder of Dover, in a letter addressto the editor of the London Medical Gazette, and published in one of the numbers for March of that journal, offers some interesting practical remarks on the use of colchicum in rheumatism. Dr. L. states that on perusing those cases of this disease which have been treated with the remedy in question, he has very generally remarked, that as soon as purging has been produced, the latter has been discontinued. The consequence, he adds, has been at most a palliation of the disease, and frequently discredit as to the utility of the drug in the treatment of it; whereas the peculiar virtues

of the colchicum are very seldom to be obtained, unless that very effect has been produced. The observation of this fact has led Dr. L. to the combination of this plant with medicines possessing active purging power, and the form which has proved so successful in his hands as well as in that of others, is the exhibition of the vinum colchici in an ordinary saline draught consisting of infusion of Senna with Epsom salts, to the extent of half a fluid drachm every four or six hours, till the bowels are very freely acted on. "This rarely fails in alleviating the pains in a remarkable degree, and if a moderate action be maintained on the bowels by lessening the dose, or observing longer intervals between each, a speedy cure, usually results from this plan. Slight rheumatic pains are often allayed by a single dose, and it rarely happens that a patient is too weak to bear its operation.

The wine employed by Dr. L. is made according to the last edition of the London Pharmacopœia, by macerating a pound of the fresh bulb in twelve ounces of very dilute spirit.

"The cases which have been treated by this plan, have been some of an acute, others of a chronic form; and very seldom has it become necessary to premise either general or local blood-letting, though of course I am far from wishing either of these means to be neglected in cases which require depletion. One particular advantage appears to me to result from this mode of administration, viz. that the colchicum which by repetition so frequently disagrees with the stomach, produces its full effects speedily, so as to render its continued exhibition seldom necessary. Some few persons cannot retain it on their stomachs in any form, and then it might be advantageous to exhibit the hydrocyanic acid either in combination, or some time before giving the colchicum."

27. *Hydrocyanic Acid in the cure of Vomiting.*—Dr. Elliotson, in one of his clinical lectures, recommends the use of prussic acid for arresting vomiting not dependent on inflammation. When this morbid state exists, he relies on antiphlogistics. He remarks, "It has the properties of an anodyne on the stomach particularly, and has a tendency to lessen the morbid irritability which produces vomiting. It is no exaggeration when I state that I have frequently seen vomiting which has lasted for months, cease on the exhibition of the first dose of this medicine. Frequently, however, in cases of spasmodic pain of the stomach, you will find that the first dose, or the second, or even one week's exhibition will not answer the desired end: you will be much more struck with its use in lessening vomiting than in lessening pain in the stomach. But you will find it of no service unless you make a distinction between the existence of inflammation, and the existence of distant causes on the one hand, and mere morbid irritability of the stomach itself upon the other."

The following practical directions will be found useful. "Hydrocyanic acid is a medicine that is exceedingly powerful, and you cannot give it in the same dose when the stomach is empty and when it is full. When the stomach is full the difference of a drop may cause a great difference in the effects. Supposing you are giving three drops, three times a day after meals, it certainly will not be right to give more than one or two drops upon an empty stomach. You cannot, in general, give it on an empty stomach more than once in the day, because when food has been once taken, the second meal comes usually before the stomach is as empty as it was before. On this account, I make it a rule to give it after breakfast, in the afternoon, and the last thing at night. As it is so powerful, you cannot tell before hand the dose that will be borne, and you should begin with a small quantity, such as you know can hardly disagree with the stomach." "You will find this (medicine) of great use for another purpose—for making other medicines set upon the stomach, which would otherwise disagree with it. You may lessen this natural irrita-

bility of the stomach so much that iodine, colchicum and medicines of that active description, will frequently sit upon it, whereas they would not unless ten minutes before you gave a dose of hydrocyanic acid. These medicines may remain upon the stomach if you unite prussic acid with them, but it answers better for this purpose if given ten minutes before, so as to come into full operation before the acrid medicines are taken. In organic affections of the stomach, you will frequently find it answer better than any other medicine, to allay the vomiting and pain."

28. *New practice in Acute and Chronic Rheumatism.*—Dr. J. K. Mitchell, of this city, in an essay under the above title, published in the American Journal of Medical Sciences, calls the attention of the profession to a form of disease simulating acute or chronic rheumatism, but depending on an irritation of the spinal marrow. In such cases, he recommends local depletion of blood from that part of the spine which supplies with nerves the parts in a state of active inflammation. Dr. M. gives the details of ten cases, eight of which were treated under his direction after this method at the Pennsylvania Hospital, and were drawn up by Drs. Stewardson and Norris, the resident physicians of that house. In all these cases the plan was highly successful. We extract the following case.

William Anderson, coloured man, a seaman, aged fifty, was admitted into the Pennsylvania Hospital, on the 31st of December, for a chronic rheumatism of upwards of five years duration. Occasionally the disease intermitted, but generally continued to affect him during the cold season. The pain affected at one or at various times, almost every part of the *right side* from head to heel, but had in no case at any period, crossed to the opposite side. Like other cases of chronic rheumatism, it was most severe in cold weather, and when warm in bed. According to his statement he seldom suffered from a winter attack for a less period than three or four months, and the existing exacerbation had lasted only a few weeks.

On the second January, two days after his admission, eight cups were applied to *the back of the neck and left side of the head,* and a powder was taken, consisting of guaiacum and nitrate of potassa, of each ten grains, with directions to repeat it three times a day. On the 3d—"Pain in the *head* and *arm* completely gone—*leg* no better." On the 4th, as on the 3d—a blister to the neck, and eight cups over the lumbar spine. On the 5th, "says the cups almost immediately relieved the pain in the *leg*. He now feels perfectly well."

On account of the extreme rigour of the season, the patient was not discharged until the latter part of February, during which period he remained entirely free from disease.

29. *Extract of Belladonna and Buchu Leaves in Spasmodic Strictures of the Urethra.*—Mr. Edwin Long, in a short paper inserted in the London Medical and Physical Journal, (April, 1831,) relates an interesting case of stricture of the urethra, in which the topical use of the extract of belladonna was attended with the happiest result. This practice has been already resorted to by M. Chevalier and M. Tyrrel, of London, as our readers will find recorded in the same journal; but Mr. Long's case occurred long before the publication of those gentlemen had appeared.

The subject of the case in question was a waterman, aged fifty years. Mr. L. found him in great pain, from an inability to void urine—he had been frequently under the care of respectable surgeons for a *constitutional gravelly complaint;* but they all failed in giving him more than temporary relief, the disease always returning upon exposure to cold, or too much exercise used in walking. He could at that time, only pass his water by drops,

and had only voided about a teacupful during the last twenty-four hours. The usual remedies proving of no avail, Mr. L. attempted to introduce a catheter; but found a completely strictured urethra, the instrument not passing farther than about two inches along the canal. Mr. L. succeeded in passing a very small wax bougie as far as the membranous portion of the urethra, but beyond this it would not pass. Bleeding to syncope, hot bath, an attempt at introduction while in the bath, &c. were resorted to during three days, but without success.

"The patient's state now became alarming; the bladder was distended to an enormous size, and I dreaded every moment lest it should give way; I therefore determined, as a dernier resort to puncture it through the rectum. This I was almost upon the point of doing, when it struck me that perhaps, the belladonna, from its peculiar relaxing powers, might exert a beneficial influence; with, therefore, the least possible delay, some extract was sent for, and, after diluting a portion of it with water, it was well rubbed along the whole course of the urethra, and particularly in the perineum. I then took a small bougie, and made a groove along it, as recommended by Mr. Carpue, smeared the extremity, and to the extent of an inch well with the undiluted extract, and without much difficulty, passed it as far as the membranous portion of the urethra, when after remaining a few seconds, I could distinctly feel something give way, and it slipt into the bladder. The water escaped gradually along the groove made in the bougie to the extent of many pints." "It was some days before I could introduce the smallest sized catheter, and never that, so violent was the spasm, without the use of the belladonna."

The cure occupied the space of a twelvemonth. The use of the belladonna occasioned neither incontinence of urine nor any other bad effect.

Mr. Long adds, that he has often prescribed the buchu leaves in stricture and different affections of the urinary organs, and has derived great advantage from them.

30. *Extract of Gratiola* (*Hedge Hyssop*) *in Delirium Tremens.*—An officer, thirty-two years of age, of a vigorous constitution, and always in the enjoyment of good health, had been in the habit of drinking very freely for six years. He had lately swallowed extraordinary quantities of brandy. One evening, after having eaten but very little for some weeks, he was attacked with severe headach, which was quickly followed by delirium, and the appearance of spectres before his eyes. These symptoms increased, and the following day leeches were applied to his head, and blisters to the calves of the legs, and a mild infusion of valerian was prescribed. No improvement occurred, and M. Muhrbeck was consulted. He found the patient dressed and up, but reeling here and there, and stretching out his trembling hands towards the objects which, in his delirium, he imagined he beheld. He talked incessantly, and changed his subjects abruptly. Sometimes he sought for arms to repel the enemy: then believed his chamber on fire, &c. He occasionally knew the persons about him, but more frequently he confounded them with the imaginary spectres. His pulse was rapid, small and hard; his looks fixed and vacant; there was an increased and circumscribed redness of the face; tongue red and towards the base covered with mucus. The patient had no appetite, but periodically a troublesome thirst, which he gratified by drinking small beer. Bowels constipated for forty-eight hours. No pain was felt from the blisters, although no dressing had been applied. No sleep since the commencement of the delirium.

Under these circumstances it was impossible to mistake the nature of the disease; it was a sub-inflammatory delirium tremens. M. Muhrbech pre-

scribed immediately three grains of extract of gratiola, with a scruple of tartrate of potash, to be taken in water every hour. At the expiration of seven hours, twenty-one grains of the extract having been taken, the patient became more calm. He was persuaded to go to bed, and in half an hour he fell fast asleep. He slept for seven hours, and awoke the next morning in full possession of his faculties. His bowels were freely evacuated; he remained perfectly conscious, and remembered nearly every circumstance that had happened during the delirium. From this time no medicine was given; he drank some coffee, and arose from bed with little to complain of except debility.

When this case of delirium tremens is compared with others, in which opium has proved efficacious, it must be admitted that the nature of this disease is very variable, and the treatment must necessarily be varied accordingly, if we wish to treat it successfully. We must abstain from administering opium when the character of the delirium manifests an exalted state of the corporeal powers, and when the patient shows less timidity, than excessive and violent paroxysms of passions; when the hands appear to be rather in a sthenic than an asthenic spasm; and where there are general signs of an inflammatory diathesis. In all these cases opium will be injurious, while the extract of gratiola, in general, acts as a specific.—*London Med. and Phys. Journal, from Hufeland's Journal.*

31. *Treatment of Lepra.*—A case of this disease, or rather of psoriasis guttata, which is the connecting link between lepra and psoriasis, came under the care of Dr. Elliotson, at St. Thomas's Hospital, and was mentioned in a clinical lecture delivered by that accomplished physician on the 7th March, 1831, (London Medical Gazette for April 2d.) It was cured, or nearly so. Dr. E. states that the treatment consisted in repeated bleedings, from which the patient always found very great relief, and the exhibition of liquor arsenicalis. He does not know that the latter was the efficient remedy, and from what he saw, he is more disposed to attribute the cure to the bleeding. The patient had no pain in the head; but had lost his memory. This, says Dr. E. he did not mention the first day, but only two days afterwards, having very consistently forgotten that he had lost his memory. He was bled on his admission, and also the following day, to twenty ounces; and these two bleedings restored his recollection. He was once afterwards bled to a pint, in consequence of complaining of considerable itching of the skin. He was kept on low diet from the time of his admission till he went away. He was admitted on the 13th of January, and dismissed on the 5th of March. He took the liquor arsenicalis in doses of never more than seven drops three times a-day. He began with two drops, and gradually increased it. The scales had entirely disappeared, but there were still a few red spots in the skin, where the eruption had been. This little redness is likely to remain some time exactly as it does after other cutaneous diseases and burns.

V. MEDICAL JURISPRUDENCE.

32. *Transportation into France of the bodies of persons who have died in the Colonies of Yellow Fever, or other diseases.*—The French minister of the marine has asked for information on this subject from the Royal Academy of Medicine. A committee, consisting of MM. Keraudren, Marc, Pariset, Dalmas, and Goubeiran, conclude their report as follows:

1. The transportation of the bodies of persons dead in the Colonies, may

be authorised when there is no suspicion of a contagious malady prevailing in the colony, or when it has ceased for some time to appear.

2. The transportation ought, however, only to be permitted after the local authority shall have assured itself that the necessary precautions for disinfection and for preserving the dead body shall have been taken under the direction of professional men.

3. The transportation in public vessels ought only to be permitted by the express authorisation of the minister of marine.

4. The transportation in merchant vessels ought only to take place after the authorisation of the minister of the interior; and the landing of the body or bodies in the ports of France, should only be performed after apprizing a sanitary commission or board of health of the circumstance, and having it done under its inspection.

The reporters assume as a fact the contagiousness of the yellow fever, and the probability of its becoming the focus of contagion when transported abroad—all of which argues more the refinement of academicians than the knowledge which should distinguish practical and practising physicians. They recommend that when it is desired by the friends of the defunct to send the body to France, it should as soon as possible be placed at the disposal of professional men, who are to proceed to its *mummification* or embalming. That is, they are to open the cavities, take out the intestines and brain, which are to be buried deep, having previously been surrounded with quicklime. They are then to put the body into a saline solution—preference being given to corrosive sublimate, sulphat of iron, sulphat of copper, or, in general, to the metallic salts, over the earthy and alkaline ones. The solution should be kept up in sufficient quantity, and saturated during the whole time of the immersion of the body by means of a small bag filled with the saline substance, and plunged in the fluid, which should be stirred or shook from time to time in order to be assured of the uniform saturation of the entire mass. Numerous and deep incisions are to be made in the flesh, in order to facilitate the introduction into it of the fluid. After a week's immersion, the body is to be taken out of the liquid, and left two or three days on a hurdle, or, still better, suspended, so that it shall be well dried. After this, all the cavities are to be well filled with powdered quicklime, and the body is then to be put in a lead coffin of suitable thickness on a layer of quicklime, coarsely powdered. The coffin is to be filled with lime, and the lid carefully soldered. The first coffin is to be inclosed in another one of oak, or some other wood of a firm texture.

The following precautions recommended for adoption when a body is to be disinterred, may not be without their value, when this is done with a view to juridical examinations. The committee certainly speak with a due dread of contagious or mephitic exhalations from the dead body. Were they approaching one that had been buried in the city of the plague, they could not have been more careful.

They direct that the mould of the grave shall be moistened with water saturated with chloride of lime. The liquid shall be allowed to penetrate into the ground, and after the moistened stratum or portion shall have been removed, to water the now uppermost stratum as before, and so on, in such a manner that the earth removed shall always have been first wet and impregnated with the chloride. When the coffin is reached, fluid chloride should be introduced into it—the precise mode is not specified: it is to be freed from all adherent earth, and raised by means of ropes, without breaking it. The whole is then to be immersed in chloride of lime, and water. After a half hour's immersion, the body is to be washed with water, and the various steps towards its mummification to be adopted, which have already been detailed.

The reporters admit that the process indicated above to reduce the body to the state of a mummy, is not complete, but rather adapted to the exigencies of the case. In order to succeed in permanently preserving the body, it ought to be kept perhaps two months in a saline liquor, until incisions made in the thickest parts had shown that they were completely saturated with it. To this immersion ought to succeed a complete desiccation in the air, and the precaution of filling the cavities with dressed flax, or, still better, aromatic and resinous astringents. After this the body placed in a leaden coffin in the midst of quicklime, might, for ages, resist the destructive action of time. Commendatory reference is made in a note, to the very complete process of embalming, detailed by M. Boudet in the *Dictionnaire des Sciences Médicales.*

33. *Can a Woman be pregnant without knowing it?*—Mr. Lozes in the *Archives Gen. de Médecine* gives two cases calculated to aid us in the solution of the above medico-legal question. He premises an account of them by the following observations:—

Most women accused of infanticide, allege in their defence, that they did not know of their being pregnant. Many writers on medical jurisprudence have admitted the possibility of such ignorance, in cases in which the woman has conceived during her sleep, or in a state of drunkenness, or in a disease which deprived her of her senses.

Though the movements of the fœtus in utero and the other signs of pregnancy must in the larger number of cases apprise the woman of her true situation, yet M. Orfila cites several accounts of married women, who had been mothers and who had no motive in concealing their pregnancy, reach the full term of their gestation without at all suspecting the state which they were in. Those which I am going to detail, says M. Lozes, and of which I was a witness, will corroborate, if it be possible, the opinion of this learned professor.

Case I. I was consulted in the month of August 1819, by a female to whom I had before rendered professional services, and who placed the most implicit confidence in me. This woman, taller than common, and of a very thin habit, had the abdomen very much swelled, to such a degree that she thought herself attacked with abdominal dropsy. After having examined her with care, I told her that I believed her to be with child: to which, she frankly replied, that she did not think so, and for the following reasons:—She told me that she was forty-six years of age, that she had ceased to menstruate in her forty-second year, that she had entered the house of a bachelor as a housekeeper, that they had always lived in connubial state, always adopting *precautions,* (these were her words), but that for the four years past, when she ceased to menstruate, they thought it unnecessary to adopt these precautions: she also added that she did not experience any of the inconveniences observed by pregnant women, and that she never felt any movements in her abdomen. It is evident from what I have just related, that this woman spoke with frankness, and yet I thought proper to delay for a while prescribing the treatment suitable for the disease under which she believed herself to labour. About six weeks afterwards, I was called to this same woman, and brought her to bed of a well formed child.

Case II. In the month of October 1824, being at Rheims, a physician of that city (Dr. Noel) requested me to go with him to visit a lady who for twenty-four hours past had suffered from violent pains through the whole extent of the abdomen, and which had gone on increasing in spite of diet, semicupia and emollient fomentations. Dr. N. told me that he believed the uterus to be affected; for, said he, during these six hours past, a sanguino-

lent sanies has been flowing from the vulva. On our arrival at the patient's we found her seated, and only suffering from pain at intervals; she informed me that she was fifty-two years of age, that she had been married thirty years, and had her menses regularly until forty-five years old, and always enjoyed good health, but had never borne children.

As there flowed from the vulva matters tinged with blood, M. Noel solicited the lady to allow me to make an examination, to which she consented, and I own that I was astonished at finding the head of a child ready to pass the superior strait.

When I announced that the patient was about to be brought to bed, both she and her husband were not a little astonished; she who had always been corpulent, assured me that the volume of her abdomen had not been enlarged, and that she had never felt any movements of the child. At all events, I determined, two hours after, to apply the forceps, and this lady was delivered of a living and well formed child, which she suckled herself.

I ought to add in conclusion, that Dr. Noel had only seen this lady once, from the time in which she had been taken with the supposed colics. It was this which I believe led him into the error.

34. *Effects of Moldy Bread on the Animal Economy.*—It is now three years, says M. Chevalier, (Journ. de Chim. Med. &c. Feb. 1831,) since M. Barruel, of the School of Medicine, had handed to him some bread, the like of which having been eaten had caused serious effects: he was requested to examine it in order to discover whether it did not contain poisonous matters. M. Barruel satisfied himself by an examination, that the bread which was *moldy*, did not contain the slightest traces of hurtful substances. He accordingly inferred that the moldiness of the bread was the cause of the sinister accidents which had followed eating it. This opinion is strengthened by the following among other facts.

In 1826, Dr. Westerhoff reported the following cases. He was called to two children of a labourer, whom he found display the symptoms of poisoning. These were less evident in the younger of the two, aged eight years, than in the other, ten years old: the latter had the face red and tumid; excited and haggard countenance; dry tongue, feeble and quick pulse. He complained of violent colic pains, giddiness, headach, and inextinguishable thirst. At one time he experienced a desire to sleep, at another, he wanted to vomit.—After a time the vomiting suddenly came on, followed soon by a copious alvine discharge—he felt himself greatly depressed, was indifferent to every object around him, and dosed from time to time. Some medicines were administered, which soon removed these symptoms, and the return to health was speedy. The other child was also relieved by vomiting.

By inquiries of the parents of these children and of the latter themselves, M. Westerhoff learned that the little sufferers had eaten nothing the evening before but a piece of stale moldy rye bread. The doctor could not draw any inferences from this information; but some days after, watermen engaged in gathering shells for the supply of lime kilns, having made use of moldy rye bread for food, being part of a small supply with which they had provided themselves some days before, were likewise taken sick, and were freed from their distress by vomiting, which supervened in consequence, and all the alarming symptoms disappeared.

M. Westerhoff now thought himself justifiable in supposing that this poisoning might be the effect of bread altered by the *mucor mucedo*.

VI. MATERIA MEDICA AND PHARMACY.

35. *Sialagogue action of Calomel promoted by Acids.*—In the Western Journal for Jan. 1831, Dr. Thomas Townsend, of Ohio, in a letter to Dr. Drake, states as the result of his experience, "that acids of any kind will cause calomel to affect the mouth, when no such effect would have resulted from its use, had the acids been entirely avoided." He is convinced that sulphate of quinia does not, as supposed by Dr. Harty, of Dublin, produce the same effect. For several years he has been in the practice of using the sulphate of quinia pretty extensively during the administration of calomel; but has never observed it to promote the sialagogue operation of the mercurial. He suggests that possibly Dr. Harty may have employed the salt of quinia, dissolved in water by the addition of diluted sulphuric acid; and that the effect alluded to may have been produced by the latter ingredient. Dr. Townsend has long entertained and acted on the opinion, that we may obtain from mercury all the advantages of its cathartic and alterative operation in fevers, without the inconvenience of a sore mouth, by simply directing the patient to avoid any kind of acid; and is no less convinced that we may almost always succeed in producing speedy salivation, by giving acid drinks freely, and at the same time washing the mouth with vinegar or other acids.

36. *Active principle of Elaterium.*—In the Edinburgh Medical and Surgical Journal, for April last, we find a paper by Mr. John D. Morries, presenting the results of his investigations into the composition of elaterium. It is generally known to our readers, that Dr. Paris claimed the discovery of a proximate principle in this substance, to which he gave the name of *elatin*, under the impression that it was the active ingredient of the medicine. Mr. Morries, however, considers it nothing more than *chlorophylle*, or the green colouring matter of vegetables; but this cannot be the case; for, though resembling this principle in the chemical relations stated by Dr. Paris, it was found to possess very powerful purgative properties. We have little doubt that the elatin of Dr. Paris is a mixture of chlorophylle with the genuine active principle of the plant, which Mr. Morries has obtained in a separate state.

The process employed by Mr. Morries for isolating this principle is very simple. The alcoholic tincture of elaterium is evaporated to the consistence of thin oil, and while still warm, is thrown into boiling distilled water: immediately a copious white crystalline precipitate falls, and increases in quantity as the liquor cools. This precipitate is the matter in question. It should be separated by decantation and filtration, and repeatedly washed with distilled water. In this state it is sufficiently pure for medical use; but may be rendered quite pure by repeating the solution in alcohol and precipitation.

"It is a white crystalline substance, of an extremely bitter and rather styptic taste, insoluble in water and the alkalies, soluble in alcohol, ether, and in hot olive oil, sparingly soluble in dilute acids. In a state of purity, it forms microscopic rhombic prisms, striated on the sides, possessed of considerable lustre, and of a silky appearance when in mass. It is decomposed by the strong acids, is fusible at a temperature a little above that of boiling water, and at a higher temperature is dissipated in thick, whitish, pungent vapours, having rather an ammoniacal odour."

It does not appear to be possessed of alkaline properties; and is denominated by Mr. Morries *elaterine*. Its medical effects are similar to those of elaterium, viz. increased secretion of urine, nausea, vomiting and fluid stools. One-twelfth or one-sixteenth of a grain has been found by Dr. Duncan

a sufficient dose for an adult. It should be given in solution, as, on account of its difficult solubility in the liquors of the stomach, it is uncertain in its operation in the state of pill. The following formula is recommended. Dissolve one grain of elaterine in an ounce of alcohol with four drops of nitric acid, and give from half a drachm to forty drops of the solution in half an ounce of cinnamon water. A more precise direction would be, to employ a fluid ounce of alcohol, and give from thirty to forty minims for a dose.

The best British elaterium afforded twenty-six per cent. of elaterine, the worst about fifteen per cent.; and a portion of French elaterium which was examined did not appear to contain more than five or six per cent. This great difference in the strength of the drug renders the general substitution of its active principle highly desirable, especially as this is so easily obtained.

In the *Journal of the Royal Institution of Great Britain* for May last, is an account of this same principle by Mr. Henry Hennel. To which of the two gentlemen the priority of discovery belongs, it is impossible for us to decide: there appears to be no doubt that the discovery was original with both. Mr. Hennel obtained the principle by treating with ether, the alcoholic extract of elaterium. The tincture of elaterium upon spontaneous evaporation leaves a mass consisting of crystalline matter mixed with a green resinous substance. Ether dissolves the latter, leaving the crystals in a state of purity. The green matter is obtained by evaporating the ethereal solution: but as ether dissolves also a small portion of the crystalline substance, the two principles are mixed in the residue. Mr. Morries obtained elaterium by a similar process; but was induced to prefer the one before detailed, as more simple and less expensive.

Mr. Hennel obtained from one hundred parts of elaterium, forty-four of the crystalline matter (elaterine,) seventeen of the green resin (probably chlorophylle,) six of starch, twenty-seven of lignin, and seven of earthy matter. He found the elaterium soluble in five times its weight of cold, and twice its weight of hot alcohol.

The green resin upon trial was found to purge actively in a dose less than one-third of a grain: but this effect probably resulted from some of the crystallizable principle with which it was necessarily mixed when procured by the process of Mr. Hennel. This gentleman did not try the crystals with a view to their medicinal effect.

37. *New Crystalline Substance obtained from Columbo—Columbine.*—Mr. Wittstock, of Berlin, has recently succeeded in extracting the bitter principle of columbo in a crystalline form. We derive the following particulars from the *Journal de Pharmacie*, of February, 1831. Columbo is first exhausted by means of alcohol of the sp. gr. 835. The alcohol is then distilled off till the tincture is reduced one-third, or one quarter; and the remainder is allowed to rest for some days. Crystals are deposited, which are to be washed, and subsequently boiled with a little alcohol and animal charcoal. The crystals are thus obtained pure. They may also be procured in a very short time by acting on columbo with ether, (.725) and abandoning the resulting liquor to spontaneous evaporation.

Columbine crystallizes in transparent quadrilateral prisms with a rhomboidal base. It is inodorous and extremely bitter, without alkaline or acid properties, soluble in thirty or forty parts of boiling alcohol, very slightly soluble in water, alcohol, or ether at common temperatures, yet imparting to these liquids a strongly bitter taste. It is also soluble in the volatile oils, and in caustic alkaline solutions from which it is precipitated by the acids. The best solvent of this new principle is acetic acid (1.040,) which takes

up about as much as boiling alcohol. Sulphuric acid colours it, at first orange yellow, then deep red; and water precipitates it from the solution of a light rusty colour. Exposed to heat it melts like wax, and at a higher temperature is decomposed, without yielding ammonia. Its solution in alcohol and acetic acid is not affected by tincture of galls, by nitrate of silver, acetate of lead, nor other metallic salts.

The bitter principle of columbo discovered by M. Planche, in 1811, appears to be columbine mixed with a little yellow colouring matter. M. Planche did not procure it in a crystalline form.

38. *Salicine not rendered alkaline by the Acids—its conversion into a peculiar colouring matter.*—The French chemists and pharmaciens still prosecute their investigations in relation to this substance; and although we cannot but entertain doubts of its fitness as a substitute for quinia, it seems incumbent upon us to follow in the footsteps of discovery, till we can arrive at something definite and certain on the subject. It must be confessed, that we should have more satisfaction in this pursuit, were it not occasionally necessary to retrace the ground over which we had already passed. In our last number, we took some pains to condense from the *Journal de Chimie Médicale*, an account of researches into the nature of salicine by M. Peschier, the result of which appeared to be, that this substance, though neutral in its ordinary state, is rendered alkaline by the action of acids, with which it then combines to form crystallizable salts. We have now to announce to our readers, from the first number, for 1831, of the same Journal, that the accuracy of the experiments of Peschier, and consequently the correctness of his inferences, is altogether denied by M. Braconnot, who maintains, that salicine is not rendered alkaline by the action of acids, either in a concentrated or diluted state. "It is impossible for me," says M. Braconnot, "to agree in the opinions of M. Peschier, or even to admit the slightest facts contained in his note." Our readers by recurring to the last number of our Journal, will see the results obtained by the latter chemist, and we shall now state as briefly as possible, those obtained by the former from similar experiments.

When salicine is moistened with nitric acid, instead of forming a nitrate, it is decomposed, and yields carbazotic acid, united to a peculiar substance, which M. Braconnot considers analogous to the resins. Treated with diluted sulphuric acid, it is dissolved unchanged, and the process by which M. Peschier obtained the sulphate of salicine, yielded to M. Braconnot the salicine itself in a state of great purity. When added to concentrated sulphuric acid, it is instantly decomposed, and imparts to the acid an intense bright red colour, which undergoes no change by the action of time. Concentrated acetic acid, boiled upon salicine, and then evaporated to dryness, effects no change in this principle, which re-appears with all its properties after the evaporation. Muriatic acid, at common temperatures, dissolves it more readily than water, and by spontaneous volatilization, yields it unaltered; but by the aid of heat, this acid converts it into a kind of resinous matter. In no instance, did M. Braconnot succeed in communicating alkaline properties to salicine, or in combining it with acids, so as to form saline compounds.

M. Braconnot succeeded in isolating the colouring principle into which salicine is converted by sulphuric acid, and found it to be without taste, and insoluble both in water, and alcohol. In the solid state it is brittle, and of a brownish black colour; but becomes bright red by the action of mineral acids, and of a beautiful deep violet colour by that of the alkalis, without, however, being dissolved, either by the acids or by alkaline solutions. The name of *rutiline* is proposed for it by its discoverer.

Salicine in the bark of the Poplar.—M. Braconnot, having successfully employed the bark of the *Populus tremula*, or European aspen, in the treatment of various kinds of fevers, was induced to submit it to an experimental analysis, which resulted in the discovery of *salicine* among its constituents. He afterwards found this principle in the bark of the *Populus alba* and *Populus Græca*. The last of these species has been introduced into the U. States, and is well known by the name of Athenian poplar. Our native aspen, the *Populus tremuloides* of Michaux, the *P. trepida* of Willdenow, is not the same with the European.

The process by which Braconnot separated the salicine from the bark of the aspen is given in the following words in the *Journal de Chimie Médicale, No.* 1, *Janvier*, 1831. "A decoction of the bark is prepared, to which subacetate of lead is added, and the limpid and colourless liquor which remains after the precipitation of the excess of lead by sulphuric acid, is evaporated. Near the end of the process, a little animal charcoal, previously washed, is added, and the liquid is filtered while hot. Upon cooling, it deposits salicine in a crystalline form."

39. *Remedial effects of the root of Artemisia Vulgaris or Mugwort.*—We have been long accustomed to receive with great distrust the favourable reports of the effects of newly discovered medicines, or of old medicines revived. Nevertheless it is our duty to record the information which reaches us, and leave our readers to ascertain its value by the test of their own experience. The observations which follow have reference to the *Artemisia vulgaris* of Europe. There is an American plant which goes by the same name in the systems of botany; but Nuttall believes it to be a distinct species from the European; and though the former may perhaps deserve a trial, no unfavourable influence drawn from its failure can be considered as conclusive against the efficacy of the latter. We derive the following statement from *Hecker's Annalen* of August, 1830, through the *Revue Médicale* of January last.

The German physicians formerly made extensive use of the root of mugwort as a remedy in epilepsy; but it fell into disrepute, and was almost forgotten, when attention was again called to it by Dr. Burdach, of Triebel. Very recently Dr. Wutzer has employed it with much success not only in epilepsy, but also in other spasmodic affections of children, and in intermittent fevers. Dr. W. considers it one of our best antispasmodics, possessing peculiar properties not to be found in other medicines of the same class. As a remedy in epilepsy it is inferior to none and superior to most in efficacy. It is especially useful in this disease occurring in young persons before the age of puberty, particularly in females. In cases which from organic derangements, or hereditary predisposition, are incurable, the medicine is often a good palliative. Its operation is much more effectual in the spasmodic complaints of children dependent upon mere disorder of the nervous system, and it is borne by the child at the breast, when the dose is properly proportioned, as well as by the adult. There are scarcely any circumstances which contraindicate the use of the medicine in affections purely spasmodic. The expressed juice of the root cures mild quotidian and tertian agues.

The root which is gathered in spring or autumn, should be dried in the shade, and without washing, so that any loss of the essential oil, which is the active principle, may be avoided. Fifty pounds slightly dried, furnished upon distillation two scruples of a volatile oil, having a light brown colour, and exhaling in a high degree the odour of the fresh root, which bears some resemblance to that of opium. This oil, upon standing, divides into two portions, differing in colour and consistence, one of which floats upon

the top, is of a deep brown colour and thin consistence; the other is thick, of a dirty yellow colour, almost gelatinous, and when agitated divides into numerous little grains—the *stearopten* of Berzeleus.

When the root is powdered for use, the cortical portion detaches itself from the interior ligneous portion, which should be rejected. The powder may be taken in substance in the dose of 25 or 30 grains, to be gradually increased to 45 or 50 grains for young adult subjects.

VII. SURGERY.

40. *Extract from a letter just received by one of the Editors, from Dr. Aban G. Smith, of Danville, Kentucky; giving an account of a case in which the operation of Lithotrity was successfully performed.*

I hoped to be able to send you half a dozen successful cases of lithotrity by this time; but I have not completed more than one, although I have several on hand.

A boy, five years and seven months old, came to me from Lexington. Finding, after some experiments, that I could not conveniently dilate his urethra to a size sufficient for my instrument of two lines and a half, I got a very ingenious young man to make me one, with my assistance, of two lines. On Friday, I introduced the instrument and opened it; but, as he was not sufficiently secured, I did not take up the stone. On Saturday, I secured him so well with bandages, &c. that I took up the stone, and broke it, as I supposed, in two pieces. It measured, on the *pince*, seven lines. On Sunday, finding but little irritation, I took up another of the pieces and broke it up. On Tuesday, I took up a small piece and broke it. On Thursday, I took the last piece and broke it up.

Each operation lasted from seven to ten minutes. He generally passed off the fragments before midnight; and then rested well. He played about as other boys do; and except during part of one day, manifested no unusal irritation. I made two efforts to discover if any fragments remained; but could find nothing. His bladder became more capacious the two last operations.

I have a number of cases on hand. I shall go to Louisville to-morrow. I have to see four or five cases on my way. Most of the cases that have presented themselves will require considerable time.

41. *Excision of the Joints.*—From the 6th Report of the Edinburgh Surgical Hospital from August 1830 to 1831, published in the Med. and Surg. Journal for April, we learn that Mr. Syme has cut out four other diseased elbow joints, making in all fourteen cases. In one case, a boy, eight or nine years old, had his joint very much lacerated five or six weeks previously; the flesh being extensively torn and bruised. The limb assumed a bad appearance, and as amputation or excision was deemed necessary, the latter was executed. On the 14th of December 1830, nearly the whole wound had cicatrized, and the arm was becoming very useful; motion existing at the elbow.

In a second case of abscess and ulceration of the joint in a patient aged twenty-eight years, excision was performed on the 6th of September; the patient recovered rapidly, was dismissed the 27th of October, and when lately seen, was in good health, having his arm very moveable and daily increasing in strength.

In a *third* case, the operation was fatal. It was the case of a boy, aged thirteen years, with diseased elbow joint of long standing, in which there was

much inflammation of the soft parts and great disease of the ulna, the whole spongy structure of which was filled with gelatinous matter.

The fourth case was a boy, aged 13 years, with a diseased joint of long standing. He was admitted the 1st of October and was dismissed well on the 27th of October.

42. *Partial Amputation of the Foot.*—Mr. Syme relates two cases of this character—one was formerly detailed and is now referred to, as proving that, a very simple artificial foot being procured, "the patient can walk with perfect ease to herself, and hardly any perceptible difference in her gait from that of other people." The second patient was operated on for caries of the tarsal bones, os astragalus, and os calcis excepted. Amputation was performed of the foot in September, and the patient was dismissed quite well on the 13th of November.

43. *Foreign bodies in the Trachea and Bronchi;—Tracheotomy.*—A learned and valuable paper is published in the April No. of the Ed. Med. and Surg. Journal, by Dr. John Browne of Dublin, which was read before the Dublin Chirurgical Society, December 9th 1829. He observes that Dessault had shown, that the trachea and bronchi did not participate in the great irritability of the glottis, and experiments and observations have demonstrated that bodies, when not angular or irregular, would be ejected from the bronchi when an opening was made in the trachea. Hence, it was natural to suppose that bodies which were irregular, sharp, angular, or impacted in the bronchi, might be removed by suitable instruments. This has been found practicable. An interesting collection of cases, in which various foreign bodies had entered the trachea and bronchi, giving rise to distressing and, in some instances, fatal affections of the respiratory organs, in some of which relief occurred by severe coughing, and in some by means of an operation, while in others nothing effectual was attempted, is given by the author. He finally concludes,

"1. That the existence of foreign bodies in one or other bronchus, can be ascertained by the stethoscope, by the pain and other uneasy sensations; and by the history of the case.

2. That since the effect of such bodies in these unnatural situations, is to excite inflammation and abscess, most commonly ending sooner or later, in death, it is incumbent on us to attempt their extraction with the least possible delay.

3. That small round bodies move freely from the bronchi to the trachea, particularly when an opening has been made in the latter, and that the best mode of promoting their expulsion is by such an operation.

4. That when sharp and angular substances have descended into either bronchus, they generally become fixed there, but may be extracted by forceps or other suitable instrument passed through an artificial opening in the trachea.

5. That the sooner such an operation is undertaken, the greater will be the chances of success, as the presence of the extraneous substance must give rise to congestion and inflammation in the lungs, and to various cerebral affections, all depending on the mechanical interruption to the natural course of the circulation.

6. That although occasional recoveries have ensued, subsequent to the ejection of foreign bodies from the bronchi, such cases are rare; and the greater number of persons so circumstanced have died at longer or shorter intervals."

It is to be remembered that the right bronchus is much larger than the left, and goes off more transversely. Foreign bodies are probably, more

frequently lodged in the right than in the left bronchus. If a long slender forceps be passed into the trachea, without giving it any particular direction, it almost invariably passes into the left bronchus from its greater obliquity.

44. *Paracentesis Thoracis for Empyema.*—Mr. Wm. Cleland relates, in the Edinburgh Journal, the case of a girl, seven years of age, on whom he operated for effusion of pus into the left pleura. The left side was enlarged, the heart pushed to the right side of the sternum; no respiratory murmur on the left side, and on drawing the fingers along the space between the fifth and sixth ribs, a sort of ring or aperture was felt. The respiration was difficult, and the child looking anxious and miserable. The operation was performed on the 24th of June, by means of a lancet; the incision was half an inch in length; about 14 or 16 ounces of a dirty brown coloured fluid, of the most nauseous odour, spouted out with violence; *a tent was introduced* and a bandage applied around the thorax. In an hour, the breathing was easier, and the pulse, 130 previously to the operation, had fallen to 100. In the evening the chest was again distended, and the abdomen tumid. The tent was removed; fifteen ounces of fœtid matter was discharged; the tent was not replaced; a roller was applied from the pubes to the axillæ. With few bad symptoms, she continued to improve. By the middle of July, the left side of the chest was more contracted than the right. Some sinuses formed and were troublesome—her general health improved very much. She passed the winter without having a cold. A small ulcer about the size of a pea remained as late as August 1830, but the patient enjoyed good health and was fatter than before her illness. The pulsation of the heart continued to be felt only on the right of the sternum. The *respiratory murmur was distinct* over the whole lung, but weaker than on the right side except at its upper part, where it sounds strong and healthy.—*Nov. 2nd*, 1830.

45. *Perforation of the third lobe of the Prostate Gland.*—Mr. R. A. Stafford of London relates two very interesting cases, demonstrative of what may be accomplished by the judicious and cautious employment of the stilette and canula (uretrotome) in obstructions of the urethra. We have not room for details, suffice it to say, that in one case, an impermeable stricture more than two inches in length was divided without any bad consequences by the lancetted stilette. This was effected in a very gradual manner, so that four months were occupied in effecting this object. After the division of the stricture, the patient suffered exceedingly from partial retention of urine, and the catheter could not be introduced beyond the prostate gland, but was there obstructed by what was deemed the third lobe of this body. As the symptoms were urgent, the uretrotome was again introduced to the obstruction, (8½ inches,) the lancetted stilette was thrust forth, and the instrument passed cautiously, in as near a line as possible with the natural channel, for nearly two inches farther. The stiletie was now 11 inches, but no urine followed. This being withdrawn, a catheter, assisted by the finger per anum, was successfully introduced into the bladder, and upwards of three pints of fœtid urine were evacuated. The operation was performed with little pain or hemorrhage: a silver catheter was left in the bladder, and by the usual attentions, the patient completely recovered, so that he could void his urine as well as ever he did in his life. The swelling of the prostate gland subsided.

In the 2nd Case, there was a closure of the orifice of the urethra, but an opening connected with the canal immediately beneath it; there was an impermeable stricture about half an inch anterior to the bulb, and anterior

to this, a false passage made some years ago by caustic, and which often bled profusely. The body of the prostate is slightly enlarged. For upwards of thirty years, the evacuation of urine has been very difficult, and for five or six years, the water has only passed *guttatim* with much straining. If the straining be very violent, there is great pain, and the neck of the bladder appears to close up, so that the urine is not evacuated. By means of the uretrotome, the urethral strictures were cautiously divided in the course of four or five weeks, but the catheter would not pass the prostate, and although the urine flowed in a larger stream, there was the same difficulty in expelling it. As the catheter could be introduced eight inches, and its point felt at the prostate gland, the obstruction was referred to the third or middle lobe; and as the symptoms were not very urgent, three or four punctures only were made in this body, no uneasiness was thus excited; in three days, the punctures were repeated, and again, after the same interval. At the fourth visit, the patient was found much relieved; he could now make water better, and the bladder had gained more power: a steel sound was introduced into the bladder, and afterwards, a catheter. In about two months the patient was perfectly well.

Mr. S. thinks that in this case, the middle lobe was so enlarged as to operate as a valve at the neck of the bladder, and that from repeated punctures in its substance, the swelling of the part went down, but that it is impossible to say how this was effected.

46. *Burns and Scalds treated by Nitrate of Silver.*—We have formerly quoted the opinions of Mr. Higginbottom on the use of nitrate of silver in various irritable inflammations, and our experience is in its favour. He recommends it in burns and scalds. In the April number of the Edinburgh Medical and Surgical Journal, there is a case detailed of its efficacy in an extensive scald of the back, hips, thighs and abdomen of a child five years old, in which large portions of the cuticle were removed. The solid lunar caustic was once applied to the whole surface, and at the time gave but little pain. Part of the surface was afterwards freely exposed to the air, and that portion on which the body rested was lightly covered with rags spread with the *neutral* ointment(?). In a quarter of an hour, the child fell asleep and had no pain or constitutional disturbance afterwards. Some of the eschars were adherent; where the ointment was applied, there was profuse serous and afterwards lymphatic secretion, but no suppuration. On the 10th day, the little patient was out of doors, and on the 12th, at school, every part being quite healed.

47. *Apparatus for Fractures of the Os Femoris.*—We have received a communication from Thomas S. Williamson, M. D. of Ripley, Ohio, read by him before the fifth District Medical Society, at their meeting in November last. The author notices some of the modern methods of treating fractures of the thigh, but observes that they are too complicated for general practice, especially in the country, where few conveniences are at command. He describes an apparatus which he believes to be effectual in fulfilling the requisite indications. We shall present an extract from the paper in which the instrument is described, not having room for the author's cases and observations.

"The apparatus consists of four pieces of timber, which may be made most conveniently of a plank an inch or inch and a half in thickness. They should be from two to three inches in breadth, according to the strength of the wood and weight of the patient. Two of the pieces should be a foot, or fifteen inches longer than the patient; the other two need not be more than two or three feet in length, and, if the patient is small, eighteen inches

in length will be sufficient. These must be placed in the form of a parallelogram, crossing each other at right angles near their ends, where they must be firmly attached to each other by a few large nails, or, if these are not at hand, by a wooden pin of sufficient size, passing through both pieces where they cross. These timbers, thus attached, should form a frame of such dimensions as readily to contain the patient as he lies extended in bed, and the bar corresponding to the soles of his feet, should be six or eight inches distant from the same. Over the frame must be laid a sheet or other piece of linen, of proper size, and strength sufficient to bear the weight of the patient without yielding much. This must be drawn tight and sewed all round with a large needle and strong thread or twine. This done, an opening, six or eight inches in diameter, must be made through the sheet near the centre, through which the patient's urine and fæces may pass. The frame is now ready to receive the patient. It is the simplest modification of what is termed Earl's bed, and is highly necessary, if we would pay any attention to the comfort of our patients, not only in cases of fractured femur, but in every other affection in which a patient cannot be taken out of bed without great pain. The frame being ready is to be placed on the floor or ground near the patient, who is to be carefully moved on to it, and so placed that the anus may correspond to the opening in the sheet, and the feet, when extended, may be several inches within the inferior bar of the frame. In this bar, on a line with the axis of the injured leg, a hole must now be bored with an inch or three quarter augur. To this hole, a pin of strong wood must now be fitted, which should project about six inches above the bar which receives it. A handkerchief or other proper bandage is now to be drawn round the ankle, over the instep, and tied under the sole of the affected foot. With this, extension must be made till the limb is restored to its proper length, when the band must be so secured as to maintain the extension by tying firmly round the pin before spoken of, at a sufficient height above the bar which receives it, to prevent the extension from pressing the heel against the sheet on which the patient lies. Whilst the surgeon is making extension by drawing the foot, an assistant should make counter-extension by holding the patient firmly by the shoulders, so as to prevent his body from being drawn with the foot. As soon as sufficient extension is made to restore the limb to its proper length, it generally assumes its proper position in every other respect; but if this should not be the case, the surgeon, after securing the extending band, so as to maintain the proper degree of extension, can readily adjust whatever else may require attention by a proper application of his hands. When this is done, an assistant should hold the foot and leg steadily in position, whilst the surgeon applies small bags filled with bran, chaff, or any other similar substance, so as to support the foot, and prevent any thing like rotation. It is most convenient to have four of these bags, about the diameter of the leg, and greater at the part which lies opposite to the foot. One on each side should extend from a little below the foot to the calf of the leg, and another from this a little above the knee. They should not be fitted so tightly but that they may be readily moulded to the form of those parts of the foot and leg with which they are to lie in contact. Before applying them, a little tow, wool, or cotton, should be passed under such parts of the limb as are not in contact with the sheet on which it lies, so that every part may bear its due proportion of the weight, and thus none will become sore from being unduly pressed.

For the most part the mere weight of the patient's body and superior extremities pressing on the sheet on which he lies, will be sufficient to make the necessary counter-extension, and prevent any shortening of the limb after it is once sufficiently extended, and the bone is properly set.

But if there should be any doubts on this subject, any desirable degree of counter-extension may easily be made by passing a handkerchief round the patient's back and shoulders, and tying it to a pin, which may be for this purpose inserted in the head bar of the frame, on a line with the axis of the patient's body; or, if the patient is a child, and so not willing to have the arms in any manner confined, sufficient counter-extension may be made by placing the frame so that the feet will be a little higher than the shoulders, and children can be very comfortable placed in this position.

As soon as the bands for extension and counter-extension, and the bags of bran, are properly adjusted, the frame may be lifted by the ends, the patient on it, and laid on bed, or carried to any place to which it is desirable to take the patient. Two or more persons may lift it, and so long as the frame continues firm, and it is maintained in any thing like a horizontal position, the patient is in no danger of suffering from the inequality of their motions. Many of the advantages which are thus gained by our being able to transport the patient from one place to another, even to the distance of miles, without danger of increasing the pain, either at the time or afterwards, will be manifest to every one. But the great importance in respect of cleanliness, of being able to remove the patient from bed, and placing him or her over a suitable vessel for receiving the fæces, &c. can only be fully realized by those who have had some experience in broken thighs, or other similar affections.

The other advantages of this apparatus over Dessault's, and others in common use, are—

1st. It is simple, easily obtained and applied.

2d. It leaves the injured part of the limb naked, so that it can, at any time, be compared with the other; and if any derangement should occur in the absence of the surgeon, it may readily be seen by any of the attendants who may choose to examine the limb, and every facility is afforded, not only for observing the slightest displacement, but for remedying it with the least possible pain to the patient; and also for applying any kind of dressing which may be necessary or proper for reducing inflammation, easing pain, or healing the wound if the fracture should be compound.

3d. Lastly, we are entirely freed, by using this apparatus, from the danger of excoriation and ulceration in the groin and other parts, on which counter-extension is usually made, and which, in children and females, is sometimes the source of much pain to the patient and embarrasment to the surgeon; we also avoid the necessity of exposing to view the upper part of the thigh, which, by some of our female patients, will not be regarded as a matter of small moment."

Our readers will readily understand the above description; and we would merely observe, that, at least two very serious objections can be urged against the mode of maintaining counter-extension: the shoulders are moveable points, and hence can afford no uniform or permanent resistance to the extending force; and secondly, there are no means provided for preventing the lateral inclination of the pelvis on the injured side, which almost invariably occurs, and by which the upper fragment is depressed, and of course the limb shortened.

VIII. MIDWIFERY.

48. *History of a case of Inversion of the Womb successfully treated—Read before the College of Physicians by Ch. D. Meigs, M. D. June 28th,* 1831.

On Saturday, the 18th of June, 1831, I was called in great haste to see

Mrs. S., in Seventh near Lombard street: the husband told me that his wife was in childbed, the child born; but that something terrible had happened. Supposing that there might be inertia with some of its consequences, I requested him to get half a drachm of ergot and bring it to me at his house, whither I immediately proceeded.

Upon entering the room, I was struck with the ghastly appearance of the woman, who was lying on her back near the foot of the bed, bloodless, pulseless, with arms and legs perfectly cold, the eyes staring wildly, the respiration short and frequent, while the body was agitated with that distressing jactitation which is the familiar attendant of imminent death from hemorrhage. She looked like one in the last agony.

Supposing from her appearance that she must be labouring under the effects of loss of blood, I immediately placed my hand on the hypogastrium to feel for the uterine globe; but instead of that I found a hollow, a sort of vacuity and want of resistance which at once excited my fears for the uterus—and upon carrying the hand to the vulva, the whole truth of her terrible situation became instantly clear. My hand was in contact with a large pear shaped mass, the smaller end of which being attached to the vulva, permitted the larger end to hang down more than half way to the knees. It was the inverted womb, the fundus or lowest part of which was covered with the placenta, much torn and defaced, yet still firmly adherent, while the sides and cervix were still lined by the membranes of the ovum.

As soon as I discovered the nature of the case, I sent a messenger to Professor James, with urgent request for his immediate attendance.

There was a great quantity of blood upon the bed, and so complete was the inversion of both the womb and vagina, that nothing more than a shallow cul-de-sac was found betwixt the labia and the tumor.

I learned, subsequently, that Mrs. S. had had two children before, on both of which occasions her accoucheur had been obliged to introduce the hand for the removal of the placenta, which adhered with preternatural force, and, as she feared that the same occurrence might again take place, she bespoke for this occasion, the aid of a midwife, as likely to prove more gentle and patient in the management of the placenta. Anxious in regard to this part of the labour, she inquired soon after the birth of the child, whether the placenta was adherent, and was told by the midwife that it was not.

Soon after this, she began to scream violently and beg the woman to let her alone, asserting that there was another child, for something very large was coming from her. It seems that, regardless of her cries, which were *shocking*, the force was continued and the placenta brought through the vulva, but as it was firmly attached to the fundus uteri, the whole womb followed the afterbirth and was turned completely inside out.

Doubtless the midwife is innocent as far as any evil intention was concerned in the case, and such a case reads a most useful lesson upon the heedless manner in which the afterbirth is often withdrawn from the organ, an operation that ought never to be done without a hand being first placed upon the hypogastrium.

In the present case the nature of the accident was not discovered by the accoucheuse, who remained at the foot of the bed more than an hour, under seemingly great embarrassment, frequently observing in a whisper that it was the strangest afterbirth she ever saw, and doubtless making attempts to remove what she still took to be a very strange afterbirth. How much, and how strongly she pulled at the organ I cannot say, but it must have been with great force, or the inversion of the vagina would not have been so complete.

After about an hour spent in these attempts, and when the woman had

become quite anemic, she desired that a physician should be called to her aid. Such is the history of the case antecedently to my arrival.

I gave Mrs. S. a quantity of strong brandy and water, and, being fearful of augmenting the hemorrhage, should I detach the placenta, I endeavoured to revert it by pressing my fingers against the fundus, but the increased thickness of this part derived from the adhesion of the placenta, prevented me from indenting it, and while reiterating these attempts, Dr. James arrived.

After hearing a short relation of the case, and examining her actual condition, he was kind enough to endeavour to reinstate the organ, but after some unsuccessful efforts, he advised that the placenta should be removed, which was, accordingly, done, but not without some difficulty, in consequence of the closeness of the union.

The placental membranes having been taken away, I, at Dr. James's request, repeated the attempt to revert, and having indented the fundus with the point of the finger, I added the force of the second, and then of the third fingers, and finding that they were advancing upwards in the sort of *cul-de-lampe*, I bent them so as to present a rounded knob, composed of the second phalanges of the four fingers. By the exercise of a great deal of force, I drove the whole mass back into the inferior strait of the pelvis, along the excavation, and to the superior strait. I think the fundus did not begin to return through the os uteri until the fingers were rather above the plane of the superior strait, and the vagina firmly stretched. At this period, I felt as if the force made use of might possibly lacerate the vagina without effecting the reversion, and accordingly requested Dr. James to press the ulnar edge of his hand firmly down on the abdomen, so as to shut up the strait, yielding his hand as mine should advance. This being done, I carried the fingers upwards, and came in contact with the Doctor's hand, placed as above; pushing it away as my own advanced, I soon had the pleasure of announcing to him that the organ was reinstated; but there was no contraction.

The woman now swallowed half a drachm of ergot, and in consequence thereof, or of the presence of my hand in its cavity, the womb began to contract with considerable force, and as I continued, by Dr. James's advice, to retain possession of the cavity, the pains became more and more considerable, reducing the cavity until I found the hand gradually forced completely out of it, into the vagina.

The uterine globe above the pubis was now firm, and of a proper size—the woman's pulse began to be distinguished at intervals, and as she took freely of brandy and vol. alkali, with small doses of laudanum, it became, in the course of an hour, quite distinguishable, but exceedingly rapid and tumultuous. She now vomited very freely, which was repeated at intervals. For an hour, she fainted almost every eight or ten minutes, exclaiming, I am going now—I am going. I took all the pillows from under her head, with a view to keep as large an amount of blood in the brain as possible. For the purpose of confining the blood also to the great vessels, I secured the abdomen with a very tight bandage, after laying compresses of diapers over it.

I gave her some bread and milk boiled, and directing a continuance of the julep and brandy toddy, left her at 8 o'clock, in a tolerably fair way. Being prevented by a call to another patient, from returning at 9 o'clock, as I intended, I committed her to the care of Dr. George Fox, after having explained the nature of her previous state: to the assiduous care of this gentleman, who remained by her bedside until 3 A. M. she is greatly indebted for her safety, for her pulse flagged so much, that he gave her in the course of the night, large quantities of brandy, unmixed, and applied

sinapisms very freely; and the Doctor thinks that without such stimulation, she must have sunk before morning.

On Sunday she remained very weak and low, with a rapid, but fuller pulse: proper nourishment was allowed, she had very little lochia; which became pale in the course of the day. The womb firm, and of a just size, to be felt above the pubis.

On Monday and Tuesday, continued to improve, takes nourishment, but is kept in a horizontal posture. To day, Thursday 23d, she seems very cheerful, the pulse still frequent, but she is evidently improving in all respects. Dr. Fox allows her a soft boiled egg, with tea and bread. The bowels have been moved, and she passes urine well, no tenderness of the abdomen.

Sunday, 26th, is still kept in a horizontal posture, but is quite cheerful and anxious to rise.

In relation to this case, I beg leave to subjoin a few remarks—

In the Compend. System of Midwifery, 2d Edit. p. 512, Dr. Dewees has the following observation on inversions of the womb.

"It is said, the uterus has been reinstated after complete inversion, but of this we may justly entertain strong doubts," &c.

I am particularly pleased to be able to add the testimony of Dr. James to my own, as to the completeness of the inversion in Mrs. Steward's case, as well as its complete reinstatement; so that, although Dr. Dewees does not believe that a case ever has occurred, wherein the womb was restored after complete inversion, yet as he strongly advises an attempt to be made in all such cases, I feel assured, that he will rejoice to learn that it has now been undoubtedly effected in this instance.

I beg leave to observe also, notwithstanding what occurred in this instance, that when the inversion is complete, it would always be well to make an attempt to revert the organ without removing the placenta should it still be attached—and this for the purpose of saving so much blood to the patient as would most probably be lost by its separation, but if it could not be readily returned with the placenta, it should be removed and the attempt repeated afterwards.—We are directed to press the womb in the hands gently so as to reduce its size. This appears to me to be a bad direction. No case could occur of inversion in a contracted womb—the accident is one that accompanies inertia after delivery—the womb is affected with after pains, and is flaccid alternately. Now it would be much easier to revert an inverted womb while flaccid than while rigid with its muscular contractions—and I very well recollect to have found the womb in the case under consideration, to contract and relax as it would have done in the abdomen—it was smaller and larger by turns. Now to handle it, to squeeze it for the purpose of making it smaller, would be to irritate it and make it rigid—under which circumstances it could not be reverted, nor even indented.

It would be best to let the womb be perfectly still—to watch the moment when it is most relaxed, large and flaccid, and then after indenting the fundus, carry the fundus rapidly through the corpus and cervix into the abdomen.

IX. CHEMISTRY.

49. *Action of Chlorine on Bile.*—The Journ. de Chimie Méd. for March, 1831, gives the following extract from a memoir of M. Charles Matteucci, of Forli, in the Roman States.

When a current of chlorine is passed through bile, this liquid loses its

colour and smell, and passes successively from azure-blue to dark yellow, and finally to milk-white. In the mean time, a white matter is deposited.

Bile, thus altered, dissolves almost completely in cold alcohol. The white matter does not dissolve, and may be collected on a filter; it is, however, soluble in ether. It contains the fatty and colouring matters of the bile, altered by chlorine.

The alcoholic solution being evaporated gives off vapours of muriatic acid, deposites crystals of chloride of sodium, and becomes reduced to a matter, which, when warm, is liquid like turpentine, but which hardens by cooling into a substance having all the characters of resin.

This resinous substance is of a dark yellow colour, somewhat bitter, solid and friable at common temperatures, and electrical by friction. It is very soluble in alcohol and ether, somewhat soluble in hot water, but very sparingly so in cold, forming with this liquid a kind of emulsion. All its solutions redden litmus. Heat decomposes it, giving rise to azotized products, in which respect it differs from common resins. At the same time it gives rise to an empyreumatic oil, and a liquid containing traces of muriatic acid.

This substance possesses the properties of an acid; for it combines with bases, from which it may be precipitated in the form of white flocks. Sulphuric acid, by the assistance of heat, decomposes it, with disengagement of sulphurous and carbonic acids and nitrogen, and formation of a liquid of a handsome red colour, which becomes converted, by a continuation of the heat, into a brilliant charcoal, easily detached from the sides of the tube in which the experiment is made. Neither the muriatic nor nitric acid has any action on it.

From these characters, the author considers the product resulting from the action of chlorine on bile, to be the same as that discovered by M. Braconnot in the picromel of M. Thenard. He gives it the name of *chloro-bilic* acid.

Chloro-bilic acid, when subjected to ultimate decomposition by means of oxide of copper, gave of

Carbon	118
Nitrogen	87
Hydrogen	15
Oxygen	46
	266

Chloro-bilic acid combines readily with metallic oxides. It forms with soda, potassa, lime, and ammonia, soluble compounds, from which the acid is precipitated by the smallest addition of another acid. In consequence of its feeble capacity of saturation, its combinations have always an excess of base.

According to M. Matteucci, the green saccharine matter of bile may be obtained very easily, by mixing sulphuric acid with it, agitating the mixture until it becomes yellow, and allowing it to stand for twelve or fifteen days. At the end of this time, a yellow substance, which the author believes to be the chloro-bilic acid, is deposited, and the liquid becomes of a handsome green colour. This is decanted, and neutralized with lime by the assistance of heat. It is next filtered, and on evaporation, the green saccharine matter is obtained.

The same matter may be obtained more easily by neutralizing the green liquid with potassa, filtering, and evaporating to dryness, and then treating the dry mass with alcohol.

This substance, in whatever way obtained, is of a handsome green colour,

and possesses a sweetish taste, like that of liquorice. It is very soluble both in water and alcohol. Chlorine destroys its colour entirely.

The constituents of bile are, therefore, according to M. Matteucci, a green saccharine substance, a fatty matter, and chloro-bilate of soda mixed with other salts.

49. *Vanadium, a newly discovered Metal.*—At a recent sitting of the French Institute, M. Dulong read a letter from M. Berzelius, which gives the following account of the discovery of a new metal by M. Sefström, of Sweden.

M. Sefström, Director of the School of Mines of Fahlun, being engaged in examining a specimen of iron remarkable for its softness, detected the presence of a substance different from all known bodies, but in so small a quantity, that it would have required much time and expense to separate a portion of it, sufficient for a thorough examination. The iron in question was extracted from the ore of Taberg, in Smoland, which likewise only furnished traces of the new substance. M. Sefström having observed that the cast iron, before its conversion into wrought iron, contained much more of the new substance, was led to suppose that the scoriæ formed during this operation would contain it in still greater abundance; and an examination of them verified his conjecture. Having, in this way, got a sufficient quantity of the new substance to study its properties, M. Sefström repaired to the house of Berzelius, in order to complete his examinations.

The name provisionally given to the new metal is derived from *Vanade*, the appellation of a Scandinavian deity.

Vanadium forms with oxygen an acid and an oxide. The acid is red, pulverulent, and fusible. After fusion, it takes the form of a crystalline mass on cooling. It is somewhat soluble in water, reddens litmus, and forms yellow neutral salts, and orange-coloured bi-salts. Its combinations either with acids or bases, when dissolved in water, possess the singular property of frequently losing their colour suddenly, which they do not regain until they are brought back to the solid state; but if they are now redissolved, they preserve their respective colours.

Hydrogen gas reduces *vanadic* acid at a bright red heat, and a coherent mass is obtained, possessing a feeble metallic lustre, and forming a good conductor of electricity. As yet, however, it is not certain that the reduction had been complete.

Vanadium, thus obtained, does not combine with sulphur, even though heated to redness in an atmosphere of that substance.

The oxide of vanadium is brown, approaching to black. It dissolves readily in acids. Its salts are of a very deep brown colour; but upon the addition of a little nitric acid, effervescence occurs, and they become changed into a substance of a beautiful blue colour.

Hydrosulphuric acid, and even nitrous acid, convert vanadic acid, when in combination with another acid, into this blue substance, which appears to be a combination of vanadic acid with the oxide of vanadium, analogous to certain combinations which tungsten, molybdenum, iridium, and osmium are capable of forming. The acid and oxide of vanadium give rise, besides, to green, yellow, and reddish combinations, all soluble in water without the assistance of any other acid.

Oxide of vanadium, provided it is formed in the moist way, is soluble in water and in alkalies. The presence of a salt in the water renders the solution impossible; and on this fact may be founded a mode of precipitating the oxide.

Aqueous solutions of vanadates are decomposed by hydrosulphuric acid, which converts them into sulpho-salts of a handsome red colour.

The chloride of vanadium is a colourless, very volatile liquid, which gives off when exposed to the air a dense red vapour. The fluoride is sometimes red, sometimes colourless, but always fixed.

Before the blow-pipe, vanadium, like chromium, colours the flux of a handsome green colour.—*Journ. de Pharmacie, March*, 1831.

The following additional information respecting vanadium is taken from the Annales de Chimie, for January, and the Journ. de Chimie Méd. for March, 1831. This metal has been discovered by M. Wöhler in the brown lead of Zimapan in Mexico, first brought to Europe by M. de Humboldt. It was in this mineral that M. Del Rio of Mexico, more than twenty years ago, supposed he had discovered a new metal, to which he gave the name of *erythronium*. The reality of the discovery was brought in doubt by Collet-Descostils, (Ann. de Chim., t. liii., p. 260.) and afterwards by Del Rio himself, (Gilb. Ann. Bd. 71, s. 7.) M. Sefström has, therefore, rendered a service to science, which is so much the more important that he discovered the new metal, under difficult circumstances, in the product of a European mineral, and that he is the first who has placed its existence beyond all doubt.

50. *Indian Corn as Aliment.*—In the Archives Générales for Jan. 1831, an outline is given of a report made on a memoir, by M. Carron, on Indian corn as an aliment. The author considers the yellow corn as much preferable to the white. The Piedmont corn is much better than that of Savoy, and three pounds of mush (polenta) made by mixing these two kinds of corn, he deems more nourishing than the same weight of brown bread. M. Carron has succeeded in making a very good bread of corn by mixing it with a small quantity of potatoes. He praises the nourishment for infants used in Italy, made by boiling Indian meal with milk and adding grape confection (raisiné). According to him, the diarrhœas, &c. attributed to the use of Indian mush, depend, either upon its faulty preparation, the immature state of the corn, or on its having been previously torrified, an operation which destroys its gummo-saccharine principle. To the damaged state of the corn, or its faulty preparation, the author attributes the visceral obstructions, the bleaching (l'étiolement), and the disease called pellagra, which for some years past has afflicted Italy. He denies that the use of this aliment diminishes the strength, and sustains his opinion by referring to the fact of the broad shoulders and athletic forms of the porters of Italy, who live almost exclusively on mush.

[We give the above as the opinions of a European writer respecting an important indigenous plant of our country. No American requires any arguments to convince him of the highly nutritious qualities of the farina of Indian corn. Jefferson, indeed, supposed it to be even more nutritious than wheat.—Eds.]

51. *Sulphate of Copper in Bread.*—At the meeting of the Society of Pharmacy of Paris, on the 8th of Feb. 1831, M. Chevallier made a report on a memoir by M. Kulmann on the adulterations of bread. In this memoir it is stated that the addition of a portion of sulphate of copper to the dough, so small as the eighth of a grain to the pound, gave it the property of fermenting considerably and of absorbing a larger quantity of water. These effects cease when the proportion of the salt is increased.

The members of the society present were generally of opinion that the presence of this salt in so minute a quantity in bread would not prove injurious to health; but nevertheless that the practice should be discountenanced as furnishing bread, containing less alimentary matter in a given weight than that made in the ordinary way.

52. *Gold and Silver of the Uralian Mountains.*—M. de Humboldt recently read a memoir to the French Institute on the geology, &c. of central Asia. Among other facts, he stated that the extent of the auriferous and platiniferous region on the Eastern declivity of the mountains is more than twelve degrees of latitude; and its annual product in gold and silver, including the product of the silver mines of Oltai, more than four millions of dollars.

The total product of the washing of gold from these mountains from 1814 to 1820, together with the product of several auriferous veins, was about seventeen millions of dollars. The largest masses found were one of twenty-four pounds, another of sixteen, and a third of thirteen pounds.

MISCELLANEOUS.

Dispensatory of the United States.—John Grigg proposes to publish in the course of the ensuing season a work under the above title, by George B. Wood, M. D., and Franklin Bache, M. D.

The work will give a complete view of the present state of Materia Medica and Pharmacy, and is designed especially to illustrate the Pharmacopœia of the United States.

Since the publication of the last number of this Journal we have received, from publishers, several works connected with the science of medicine. Most of those works consist in republications of English editions, which have been reviewed in some of our preceding volumes, or are noticed in the present number.

The unusual size of this number has compelled us to omit, together with several articles we had prepared for the miscellaneous department, a notice of one or two of the aforesaid works, the list of which we here annex.

Tweedie on Fever—from Carey & Lea.

Select Medico-Chirurgical Transactions—from Carey & Hart.

Tate on Hysteria—from Carey & Hart.

Thompson on Inflammation—from Carey & Lea.

Teale on Neuralgia—from Carey & Hart.

Gross on the Bones,
Smith on Fevers, } been reviewed—from Carey & Hart.

Pharmacopœia of the United States—from the Committee of Publication.

ERRATUM

In the last Number.

In the Review of Smith on Fever, page 401, line 11, for *situation*, read *constitution*.